Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

NUTRITIVE VALUE
# of the
Per Capita Food Supply

1909–45

LIBRARY
CURRENT SERIAL RECORD
☆ JAN 3 1 1947 ☆
U. S. DEPARTMENT OF AGRICULTURE

UNITED STATES
DEPARTMENT OF AGRICULTURE
MISCELLANEOUS PUBLICATION
NO. 616

CONTENTS

Page

Summary 1
Basic data for the analysis 2
    Estimates of food supplies 2
    Per capita food supplies in this report 2
    Estimates of nutritive value 3
Trends in apparent per capita consumption of major food groups 4
Trends in the nutritive value of the per capita food supply 6
Contribution of major food groups to nutritive value of food supply 8
Nutritive value of food supply per adult-male equivalent 9
Evaluation of the adequacy of the food supply 11
Appendix A. Foods included in the study 12
Appendix B. Enriched and fortified foods 14

TABLES

1. Percentage increase in nutritive value of food supply, per adult-male equivalent and per capita, 1944 compared with 1920 (1920 = 100) 10
2. Apparent per capita food consumption, by major food groups, estimated retail weights, 1909-45 16
3. Apparent per capita food consumption, by major food groups, estimated retail weights, 1909-45. (Index numbers: 1935-39 = 100) 17
4. Nutrients available for consumption per capita per day, 1909-45 18
5. Nutrients available for consumption per capita per day, 1909-45. (Index numbers: 1935-39 = 100) 19
6. Nutritive value of the daily per capita food supply for iron, thiamine, riboflavin, and niacin, with and without enrichment of grain products, 1935-39, 1941, 1942, 1943, 1944, and 1945 20
7. Relative amounts of iron, thiamine, riboflavin, and niacin in the food supply, without enrichment of grain products, 1941, 1942, 1943, 1944, and 1945, as compared with 1935-39 20
8. Amount and percentage of iron, thiamine, riboflavin, and niacin obtained solely from enrichment of grain products, 1941, 1942, 1943, 1944, and 1945 20
9. Percentage of total nutrients contributed by major food groups, 1917-18 . . 21
10. Percentage of total nutrients contributed by major food groups, 1925-29 . . 21
11. Percentage of total nutrients contributed by major food groups, 1935-39 . . 22
12. Percentage of total nutrients contributed by major food groups, 1944-45 . . 22
13. Recommended dietary allowances and per capita dietary requirements based on population statistics for 1920, 1930, 1940, and 1944 23
14. Nutritive value of the food supply per adult-male equivalent, 1920, 1930, 1940, and 1944 23

Washington, D. C. January 1947

ILLUSTRATIONS

Page

1. Dairy products, excluding butter: Annual per capita consumption, 1909-45 . . 24
2. Eggs: Annual per capita consumption, 1909-45 24
3. Meats, poultry, game, fish: Annual per capita consumption, estimated retail weights (excluding pork fat cuts), 1909-45 25
4. Fats and oils, including butter and pork fat cuts: Annual per capita consumption, 1909-45 25
5. Dry beans, peas, soya flour, and nuts: Annual per capita consumption, estimated retail weights, 1909-45 26
6. Potatoes and sweetpotatoes: Annual per capita consumption, estimated retail weights, 1909-45 26
7. Citrus fruit and tomatoes: Annual per capita consumption, estimated retail weights, 1909-45 27
8. Fruit and vegetables other than citrus and tomatoes: Annual per capita consumption, estimated retail weights, 1909-45 27
9. Food grain products: Annual per capita consumption, 1909-45 28
10. Sugar and sirups: Annual per capita consumption, 1909-45 28
11. Food energy (calories), protein, and calcium in the per capita food supply, 1909-45. (Index numbers: 1935-39 = 100) 29
12. Iron, vitamin A, and thiamine in the per capita food supply, 1909-45. (Index numbers: 1935-39 = 100) 30
13. Riboflavin, niacin, and ascorbic acid in the per capita food supply, 1909-45. (Index numbers: 1935-39 = 100) 31
14. Food energy: Percentage contribution of major food groups to total food energy in per capita food supply, 1909-45 32
15. Protein: Percentage contribution of major food groups to total protein in per capita food supply, 1909-45 33
16. Calcium: Percentage contribution of major food groups to total calcium in per capita food supply, 1909-45 33
17. Iron: Percentage contribution of major food groups to total iron in per capita food supply, 1909-45 34
18. Vitamin A; Percentage contribution of major food groups to total vitamin A in per capita food supply, 1909-45 34
19. Thiamine: Percentage contribution of major food groups to total thiamine in per capita food supply, 1909-45 35
20. Riboflavin: Percentage contribution of major food groups to total riboflavin in per capita food supply, 1909-45 35
21. Niacin: Percentage contribution of major food groups to total niacin in per capita food supply, 1909-45 36
22. Ascorbic acid: Percentage contribution of major food groups to total ascorbic acid in per capita food supply, 1909-45 36

NUTRITIVE VALUE OF THE PER CAPITA FOOD SUPPLY, 1909-45[1]

By Faith Clark and Berta Friend, *food economists*
Bureau of Human Nutrition and Home Economics
and
Marguerite C. Burk, *agricultural economic statistician*
Bureau of Agricultural Economics[2]

SUMMARY

Periodic estimates of the United States food supply have been made during recent years. These proved useful for showing trends in consumption of major food groups, for indicating trends in the relative adequacy of the civilian diet, and for comparison with similar data for other countries.

In order to provide historical perspective for current data, the nutritive values of the Nation's food supply have been estimated for each year beginning with 1909, the first year for which reasonably adequate data are available.

This report presents three sets of data for the period 1909-45: (1) Estimates of per capita quantities of the major groups of foods available for consumption each year at the retail level of distribution, including home-produced food; (2) the daily per capita quantity of 11 nutrients in these foods; and (3) the proportion of the total quantity of the various nutrients coming from the major groups of foods.

In addition, the nutritive value of the food supply per adult-male equivalent is presented for the years 1920, 1930, 1940, and 1944 to determine the extent to which change in age, sex, and activity of the population result in trends that differ from the per capita measures.

This report shows that recent wartime levels of all dietary essentials studied, except food energy, protein, and carbohydrate, were higher than those existing during the earlier years of the period covered. The average quantity of protein in the civilian diet during World War II was as high as the peak levels preceding World War I. High wartime nutrition levels resulted from increased consumption of almost all foods, but especially of milk, eggs, vegetables, and citrus fruit, and from the enrichment of white flour and bread.

From 1909 to 1945 there was an increase in the per capita quantities of calcium, riboflavin, vitamin A, and ascorbic acid. The greater amounts of calcium came from an increase in milk; the increase in riboflavin from larger quantities of milk and in addition, in recent years from the enrichment of grain products; the larger quantities of vitamin A and ascorbic acid from an increase in vegetables and fruit. From 1909 to about 1935 there was a gradual decrease in the average quantities of protein, iron, thiamine, and niacin in the food supply largely because of the decrease in the per capita consumption of meat and grain products. From 1935 to 1945, marked increases occurred in the quantities of all dietary essentials except calories and carbohydrate.

---

[1] This publication supersedes the multilithed edition of June 1946 and the analysis published in The National Food Situation of February 1944.

[2] Prepared with the assistance of Rosalind C. Lifquist, Bureau of Human Nutrition and Home Economics, Selma C. Schweitzer, and Lois N. Shores of the Bureau of Agricultural Economics, and other staff members of the two Bureaus.

From 1909 to 1945 potatoes, and until 1943, grain products provided a decreasing proportion of all nutrients. Since 1943, as a result of the enrichment program, a larger share of the total quantities of iron and the B-vitamins have been furnished by grain products. A greater proportion of the total ascorbic acid is now obtained from citrus fruit and tomatoes than in earlier years.

BASIC DATA FOR THE ANALYSIS

Estimates of Food Supplies

Data on per capita supplies of food are regularly reported by the Bureau of Agricultural Economics in The National Food Situation.

In general, in any one year these supplies are estimated by adding beginning stocks, total annual production, including food consumed on the farms where produced, and imports and shipments, then subtracting ending stocks, nonfood use, and exports and shipments. Military takings are also subtracted for the war years 1941-45. Data used are from the following sources:

Item	Source of data
Stocks	Bureau of Agricultural Economics, Department of Commerce, stock reports of Production and Marketing Administration, trade reports.
Production	Bureau of Agricultural Economics, Supply Estimates Committees of the Department of Agriculture, Fish and Wild Life Service of the Department of the Interior.
Foreign trade	Department of Commerce, shipment data of Production and Marketing Administration.
Nonfood use	Bureau of Agricultural Economics.
Military procurement	Special reports submitted to the Department of Agriculture.

Data on military takings during World War I were so incomplete that they could not be used. Accordingly, total domestic food "disappearance" data for the years 1909 to 1940 were divided by the total population. For the years 1941 to 1945, the total food supplies available for civilian consumption were divided by the number of people eating out of civilian supplies. Adjustments were made for members of the armed forces on leave or for other reasons eating in homes or restaurants in this country.

Per Capita Food Supplies in This Report

The data relating to the per capita food supplies in this report differ from those in The National Food Situation in three ways:

(1) The quantities reported in The National Food Situation are in terms of farm, wholesale, or processed weight, depending on the point in the marketing system at

which data are obtained. The data given in this report are estimates of the per capita quantities of food at the retail level of distribution.[3]

(2) Deductions from the quantities reported to the Bureau of Agricultural Economics are made for the market losses that occur in the handling of food. In making the adjustments, the best available trade information and sample studies have been used. As an example of the conversion factors used, the retail weight of beef is estimated to be 79 percent of the wholesale dressed weight.

(3) Preliminary estimates of the consumption of minor food items and rough estimates of the produce of town and city gardens have been added in order to complete the estimates of consumption.

Alcoholic beverages are not included.

Estimates of Nutritive Value

The nutritive value of the food supply for each year was obtained by multiplying the estimated quantity of each food by appropriate food-composition figures. The foods used are listed in Appendix A. The composition values are those published in Tables of Food Composition in Terms of Eleven Nutrients, United States Department of Agriculture Miscellaneous Publication No. 572, supplemented by a few unpublished values compiled by the Bureau of Human Nutrition and Home Economics.

Calories were estimated according to the Atwater system, which was developed for use with the average mixed diet in this country. This system results in a higher caloric value than does the method of calculation used by the Medical Research Council of the United Kingdom, a point to be kept in mind when making comparisons of the energy value of food supplies. It has been estimated that the United Kingdom method gives figures about 150 calories lower[4] per capita per day than would have been derived using the method of this analysis.

Within the last few years, there has been enrichment or fortification of several types of foods with minerals and vitamins. Composition figures used include these added minerals and vitamins. Foods that are commonly enriched or fortified are white flour and bread, breakfast cereals, and margarine. Appendix B gives a brief history of the enrichment and the fortification of foods.

The consumption of vitamin and mineral preparations other than those used in the enrichment or in the fortification of the foods mentioned is not included here. Quantities of calcium or other minerals added to flour to make it self-rising or phosphated are not included nor is the nutritive content of baking powder, yeast, or dough conditioner.

---

[3] Includes estimates of food consumption in farm homes, restaurants, and other institutions adjusted to approximate the quantities as they tend to be purchased at the retail level. See Appendix A for list of food items.

[4] U. S. Department of Agriculture. Food Consumption Levels in the United States, Canada and the United Kingdom. 121 pp., illus. 1944.

TRENDS IN APPARENT[5] PER CAPITA CONSUMPTION OF MAJOR FOOD GROUPS

The most notable changes in food consumption during the period 1909 to 1945 are the upward trends for dairy products (excluding butter), citrus fruit, and leafy, green, and yellow vegetables, and downward trends for potatoes and grain products. (See table 2 and figs. 1-10.)

Until 1941 or 1942, the gradual increase in milk consumption, measured as milk equivalent,[6] was due to increased use of manufactured dairy products other than butter. During World War II, fluid milk consumption increased markedly. Incomes were high, milk prices were relatively low, many other foods were comparatively short in supply, and the nutritional value of milk was being emphasized.

No general trend in the per capita consumption of eggs is evident. Consumption rose steadily during the 1920's, declined in the early 1930's, and then increased again. A new record in egg consumption was established in 1945. At this time meat supplies were short, incomes were high, and a near-record production of eggs occurred. Meat consumption followed a downward trend from 1909 to the middle 1930's. Per capita consumption was high in 1934, when the drought forced heavy livestock liquidation, but low in the following year. During World War II, the civilian per capita consumption of meat again reached the high level of the years before World War I. The consumption of poultry and fish remained remarkably constant from 1909 to 1945.

The consumption of fats and oils, including butter, bacon, and salt pork, was comparatively stable after about 1923, when it reached a somewhat higher level than in the preceding 15 years. With the exception of the two war periods, butter consumption per capita fluctuated very little. In contrast, that of lard and fat cuts of pork (bacon and salt pork) varied considerably.

Shortening and cooking and salad oils were becoming increasingly important foods until supplies were restricted by World War II. Margarine consumption was unusually high during the war when butter supplies were short.

New records in the per capita consumption of dry beans and peas and nuts were established in both war periods. More dry beans are consumed now than in the early part of the 37-year period because of the increasing demand for canned beans. Peanut consumption was particularly high from 1942 to 1945.

The downward trend in the consumption of potatoes and sweetpotatoes is one of the most striking changes in food consumption. Per capita potato consumption decreased a third from 1909 to World War II and sweetpotato consumption declined a fourth.

---

[5] The basic data used in this report are not quantities of food actually consumed, but the best estimates of quantities of food available for consumption or disappearing into distribution channels in a given year.

[6] The following conversion factors, based on protein and mineral content, were applied to the dairy products in this report to obtain their fluid whole-milk equivalent.

	Factors for converting pounds of dairy products to quarts of fluid whole milk
Evaporated milk	0.94
Condensed milk	1.11
Dry whole milk	3.55
Dry skim milk	4.57
Cream	.33
Ice cream	.56
American cheese	3.20
Cottage cheese	1.40

The average consumption of two food groups--citrus fruit and tomatoes and leafy, green, and yellow vegetables--has shown an upward trend. More than four times as much citrus fruit was consumed in 1945 as in 1909. Fresh-tomato consumption remained fairly constant from 1909 to about 1936; then it increased gradually until it was about 40 percent larger in 1945 than the average for 1909-36. Little change occurred in the purchase of canned whole tomatoes, but a great increase took place in tomato juice and tomato paste. The per capita consumption of fresh leafy, green, and yellow vegetables rose about 20 percent between the 1917-18 war period and 1941. A new record was established in 1945, when the consumption of cabbage, lettuce, and carrots was very high. Cabbage had been fairly constant until 1945, when it increased to 39 pounds per capita. Canned leafy, green, and yellow vegetable consumption was more than four times as large in 1945 as in 1909.

A definite trend is not apparent in the consumption of the other vegetables and fruit as a group. Melon consumption rose after World War I to about 30 pounds per capita per year, and since 1921 has fluctuated rather widely around that rate. Other fresh vegetables have showed some gradual increase. The consumption of canned vegetables other than tomatoes and leafy, green, and yellow vegetables tripled over the 37-year period, with a particularly large increase occurring in corn. Only about half as many apples were consumed in the past few years as in the period just before World War I. Other fruit remained fairly constant as a group, with great year-to-year fluctuations in individual foods. The per capita civilian consumption of canned fruit rose from 3 pounds in 1909 to 19 pounds in 1940-41. During World War II it was cut sharply by large military purchases. Dried-fruit consumption, particularly of prunes and raisins, rose 50 percent during the 1909-40 period. The average consumption of frozen fruit and vegetables is still small in relation to the quantities consumed as fresh or canned, although the percentage increases since the mid-thirties have been very great.

A decline of one-third occurred in the per capita consumption of grain products in the 37-year period. Much of the decrease was due to a 50-pound reduction in the per capita consumption of wheat flour from the 200-pound level before World War I to about 150 pounds in 1941. Corn meal consumption in 1945 was only about one-third of the average quantity consumed prior to World War I. In the same period the use of rye flour also declined 56 percent. On the other hand, the consumption of oatmeal, wheat and corn cereals increased materially.

There was an upward trend in the consumption of sugar from 1909 to about 1930. During the middle 1930's per capita consumption of sugar was smaller than for the years 1924 to 1928. After the sharp rise in 1941, consumption declined with smaller imports and in-shipments, substantial military requirements, and smaller domestic production in 1943. The rate of consumption increased in 1944 and resulted in reduction in stocks, but it dropped again in 1945. Consumption of sirups, chiefly made from starches, was relatively high during World War II as the result of short sugar supplies.

Tea and coffee, though not important from a nutritional viewpoint, are a part of the general food supply. Tea consumption per capita decreased considerably from 1909 to 1945, while coffee consumption increased. Per capita cocoa consumption showed a definite upward trend until imports were reduced in 1942 and military purchases took a substantial part of the United States supply of cocoa.

TRENDS IN THE NUTRITIVE VALUE OF THE PER CAPITA FOOD SUPPLY

Food energy (calories).--From 1909 to 1945 the number of calories available from the per capita food supply ranged from 3,170 to 3,560 per capita per day (table 4 and fig. 11, *A*). The daily average was more than 3,400 calories during most of the years from 1909 to 1931, with the exception of a short period during and after World War I. From 1932 through 1940 the average each year fell below 3,400, with the low at 3,170 calories in 1935, a year of both economic depression and drought. From 1940 through 1945 the average number of calories each year fluctuated between 3,350 and 3,450 per capita per day.

Carbohydrate, fat, and protein all contribute calories. The amount of carbohydrate in our national diet has been decreasing steadily since 1909, largely because of the decline in the consumption of grain products and potatoes.

The average quantity of fat available both in visible and invisible forms (as in milk) has been steadily increasing.

Protein.--The per capita quantity of protein in the food supply decreased from 1909 to 1933 (table 4 and fig. 11, *B*). In 1934 it took an upward turn because of a large increase in the meat supply. Lack of pasture and feed resulting from drought necessitated the killing of many animals during this year. Because a considerable part of 1935's normal meat supply had been butchered and eaten in 1934, the 1935 protein supply dropped to 85 grams per capita per day, a low for the period studied. Since 1935, per capita protein supplies have increased steadily to a level of 100 grams per capita per day in 1945, almost the same as in 1909. The recent rise in protein has been chiefly due to the increased consumption of milk, eggs, meat, poultry, and fish.

Calcium.--The steady rise in the quantity of calcium available in the food supply (table 4 and fig. 11, *C*) is closely correlated with the rise in milk consumption (fig. 1). This relationship is shown by an increase of 52 percent per capita in milk consumption from 1909 to 1945, accompanied by a rise of 40 percent per capita in calcium. Milk or milk products (excluding butter) now furnish about three-fourths of the total calcium. Since 1942 the average amount of calcium in the food supply has been above 1.0 gram per capita per day.

Iron.--Iron, like protein, decreased from 1909 to 1933 with the gradual decline in the consumption of grain products and meats (table 4 and fig. 12, *A*). Before the enrichment program, grain products and the meat group furnished about half the average per capita quantity of iron. Hence, the decrease in these two food groups resulted in a decrease in iron in the food supply.

With the enrichment program and the increased consumption of meat, the average quantity of iron in the food supply increased from 13.8 milligrams per capita per day in 1935-39 to 18.6 milligrams in 1945, an increase of 35 percent. Had there been no enrichment, the 1945 figure would have been 15.9 milligrams, or an increase of 15 percent since 1935-39 (tables 6 and 7).

Vitamin A value.--The amount of vitamin A in the national food supply has been increasing since about 1925 (table 4 and fig. 12, *B*). A low level occurred in 1925 with a per capita value of 7,100 International Units per day. The highest average value yet recorded is for 1945 with an estimate of 9,700 International Units per capita, an increase of 37 percent since 1925. The 1945 figure is higher than the average for 1935-39. This is chiefly because of the increased consumption of leafy, green, and yellow vegetables, including larger wartime production of town and city gardens. The long-term improvement in the vitamin A value of the per capita food supply is also due to the increase of leafy, green, and yellow vegetables and to a lesser extent to the increase of milk, citrus fruit, and tomatoes.

Thiamine (vitamin B1).--Quantities of thiamine gradually declined from 1909 to the mid-thirties (table 4 and fig. 12, *C*). The smaller amounts of this vitamin in the national food supply resulted largely from the decreasing consumption of grain products. Beginning with 1937, however, there has been a phenomenal rise in the per capita amounts of thiamine. The record for the period of this study is about 2.3 milligrams per day in 1944. The rise after 1937 was due chiefly to the increased supplies of meat, poultry, and fish and to the enrichment of white bread and flour, which began in 1941. By 1943, enrichment was an important factor in attaining the high wartime level of this vitamin.

During 1945 the amount of thiamine in the per capita food supply was about 4 percent less than in 1944 because of the smaller amount of pork. However, in 1945, even without enrichment, the quantity of thiamine in the per capita food supply would have been higher than the average for the years 1935-39 (table 6). In 1943, 1944, and 1945, it was approximately one-fourth higher than it would have been had enrichment not been in effect (table 8).

Riboflavin.--Milk is a good source of riboflavin; hence the daily supply of this vitamin is affected significantly by the level of milk consumption. The general trend was upward throughout the entire series, with a small hump in World War I and a steep rise in World War II (fig. 13, *A*). From 1940 to 1945 the amount of riboflavin increased from 1.9 to 2.5 milligrams per capita per day or almost one-third (table 4). During this period, the average quantity of dairy products (excluding butter) increased a fifth.

Enrichment also added some riboflavin to the average diet during 1943, 1944, and 1945. Without enrichment, the average quantity of riboflavin would still have been over 2.2 milligrams per capita in 1945 (table 6). With enrichment, the average amounts of riboflavin available in 1944 and 1945 were about one-eighth higher than they would have been without the enrichment of grain products (table 8).

Niacin.--In general, quantities of niacin, declined from 1909 to 1935 (table 4 and fig. 13, *B*). Since a large share of the total amount of niacin is furnished by meat, poultry, and fish, the amount of niacin is closely related to the quantity of this food group. From 1909 to 1935 the average quantity of niacin decreased 18 percent, and the per capita consumption of meat, poultry, and fish dropped 22 percent.

Since enrichment of grain products has been in effect, however, meat has contributed a relatively smaller share of the total quantity of niacin in the average diet. Chiefly because of enrichment and larger supplies of meat, poultry, and fish, the niacin value of the per capita food supply in 1944 and 1945 was almost 40 percent higher than in 1935-39. During 1944 and 1945, the food supply contained about one-fifth more niacin than it would have without enrichment (table 8).

Ascorbic acid (vitamin C).--The amount of this vitamin available in our national food supply showed a slightly upward trend from 1909 to the early 1930's (table 4 and fig. 13, *C*). After 1937 the upward trend became more pronounced so that in 1945 the level was 39 percent higher than in 1930. Some of the recent wartime increase came from vegetables grown in town and city victory gardens. Much of the current as well as the long-term increase has been associated with the greater consumption of citrus fruit. Since 1943 the quantity of citrus fruit and tomatoes available for consumption has been over 100 pounds per capita per year; in 1909 it was less than one-half that quantity (table 2). The increased amounts of ascorbic acid available from larger quantities of ctirus fruit and tomatoes and of leafy, green, and yellow vegetables have more than offset the decreasing amounts of this vitamin from potatoes.

CONTRIBUTION OF MAJOR FOOD GROUPS TO NUTRITIVE VALUE OF FOOD SUPPLY

The relative contribution of the various food groups to the total value of each dietary essential in the food supply has remained fairly stable for iron and niacin, although it has varied for the other nutrients. (See tables 9-12 and figs. 14-22.) Among the principal changes illustrated by the charts, are the increasing percentages of the total calcium and riboflavin furnished by dairy products. The proportion of ascorbic acid supplied by citrus fruit and tomatoes increased, whereas the proportion contributed by potatoes decreased. During the period covered by this study, the proportion of vitamin A from leafy, green, and yellow vegetables rose gradually. Grain products supplied less and less of the calories and protein. However, with the enrichment program, an increasing proportion of iron, thiamine, riboflavin, and niacin was provided by grain products.

Dairy products (excluding butter).--The contribution of this group to the total quantity of calcium and riboflavin rose as their consumption increased. In 1909 two-thirds and in 1944-45, three-fourths of the calcium in the average diet came from dairy products, excluding butter.

From 1909 to 1941-43 the riboflavin contributed by this group rose from 40 to almost 50 percent; during 1944-45, it decreased to about 45 percent. Relatively more riboflavin was furnished by grain products since 1943 because of the enrichment of white bread and flour.

Eggs.--Eggs are consumed in relatively small quantities and therefore do not contribute large proportions of any of the nutrients studied. From 1909 to 1945 eggs furnished proportions varying from 5 to 8 percent of the total amounts of protein, iron, vitamin A, and riboflavin.

Meat, poultry, fish.--This group usually makes its chief contribution to the average diet in niacin, thiamine, protein, iron, riboflavin, and calories--in descending order. For these dietary essentials other than calories and protein, the enrichment of grain products has changed somewhat the relative importance of this group. Even though a smaller proportion of iron and the three B-vitamins--thiamine, riboflavin, and niacin--has recently been furnished by meat, poultry, and fish than formerly, their contribution in milligrams per capita has increased.

Fats and oils.--Fats and oils contribute approximately one-sixth of the calories. The proportion increased slightly during the years covered by this study. As a group, fats and oils usually furnish 8 to 10 percent of the total vitamin A, the proportion depending largely upon the quantity of butter and fortified margarine. During World War I, a period when the supply of butter was relatively low and margarine was unfortified, 8 percent of the total vitamin A was obtained from this food group. The percentage increased to 10 percent in 1925-29 and 9 percent in 1935-39. It fell to 6 percent during 1944-45, when the combined quantity of butter and fortified margarine available for civilian consumption was at a record low level.

Vegetables and fruit.--Vegetables and fruit make their chief contribution to the nutritive value of the diet in ascorbic acid and vitamin A. Over 90 percent of the total quantity of ascorbic acid and about 60 percent of the total vitamin A value during each of the 37 years studied was furnished by fruit and vegetables. There was a marked trend upward in the proportion of ascorbic acid furnished by citrus fruit and tomatoes, from 13 percent in 1909 to 29 percent in 1945. During the same period, the relative as well as actual contribution of potatoes and sweetpotatoes decreased from 36 percent in 1909 to about 19 percent of the total in 1945.

The proportion of the total vitamin A value of the average diet furnished by leafy, green, and yellow vegetables increased considerably, moving from 25 percent in 1917-18 to 35 percent in 1944-45. During the same period, the contribution of the potato group, principally from sweetpotatoes, decreased.

Dry beans and peas, nuts.--These foods are consumed in relatively small quantities and so contribute only small proportions of the total protein, iron, thiamine, riboflavin, and niacin. They furnish little, if any vitamin A or ascorbic acid. In the charts, this group is included with other vegetables and fruit.

Grain products.--Grain products make an important contribution to all the dietary essentials studied except calcium, vitamin A, and ascorbic acid. As the consumption of grain products declined during the earlier years covered in this analysis, the importance of this group in the nutritive value of the diet decreased. For example, the proportion of calories and protein furnished by grains decreased from about a third in World War I to about a fourth of the total in World War II. In recent years, however, because of the enrichment program the proportion of iron, thiamine, riboflavin, and niacin derived from grain products has increased markedly. In 1935-39, 17.5 percent of the total thiamine was furnished by grain products, as compared with 33.6 percent of the total in 1944-45 (tables 11 and 12).

Sugar and sirups, cocoa.--Sugar and sirups furnish little of any of the dietary essentials except food energy. The proportion of the calories contributed by these foods increased from 12 percent in 1909 to 17 percent in 1925-29 and then declined to 14 percent in 1944-45 because of the wartime sugar shortage. Molasses and some of the sirups, as well as cocoa, furnish a small amount of the total iron.

NUTRITIVE VALUE OF FOOD SUPPLY PER ADULT-MALE EQUIVALENT

The analysis discussed so far in this report has been based on per capita computations. Trends in the nutrients were also examined, taking into account the needs due to changes in the age, sex, and occupation of the population.

In order to do this, it was necessary to determine the trend in nutrients per adult-male equivalent.

The first step was the computation of weighted per capita averages of the recommended dietary allowances for each of the nutrients taking into account age, sex, and activity (table 13). These were figured for the years 1920, 1930, 1940, and 1944.[7]

These weighted per capita averages were compared with the recommended dietary allowances for a moderately active male and the nutrients in the food supply per adult-male equivalent were determined.

---

[7] Population data by sex and age groups were from the Bureau of the Census. The adults in 1920, 1930, and 1940 were put into three activity groups on the basis of an unpublished study by the Bureau of Human Nutrition and Home Economics of occupational groups derived from 1940 census data. The 1944 breakdown (for civilians only) was based on a joint study by the Bureau of Agricultural Economics and the Bureau of Human Nutrition and Home Economics which took into account the increased tempo of wartime living and the high level of employment.

The method can be illustrated with calories as an example.

For 1940, it was estimated that the caloric need of the population, taking into account, age, sex, and activity, was 2,610 calories per capita per day (table 13).

The National Research Council recommends 3,000 calories per day for a moderately active adult male (table 13). The ratio of the average needs per person in 1940 to the National Research Council's recommendation for a moderately active adult male is $\frac{2,610}{3,000}$ or 0.87.

Table 4 contains the estimated calories from the total food supply for 1940--3,350 calories per capita per day. Using the ratio of average calorie needs for the 1940 population to adult-male needs (0.87), to derive the adult-male equivalent for the 1940 supply of calories, we have $\frac{3,350}{0.87}$, or 3,850 calories (table 14):

In summary, it resolves into a ratio of:

$$2,610 : 3,000 :: 3,350 : X$$

X = 3,850 calories per adult-male equivalent

The supplies of dietary essentials per adult-male equivalent (table 1) have much the same upward trend as those indicated for the per capita food supply. The percentage increase of nutrients for 1944 over those for 1920 for adult-male equivalent and for per capita food supplies are given below.

TABLE 1.--*Percentage increase in nutritive value of food supply, per adult-male equivalent and per capita, 1944 compared with 1920 (1920 = 100)*

Nutrient	Per adult-male equivalent[1]	Per capita[2]
	Percent	*Percent*
Calories	1.5	3.3
Protein	8	8
Calcium	27	25
Iron	24	25
Vitamin A value . .	16	18
Thiamine	37	39
Riboflavin	37	39
Niacin	30	32
Ascorbic acid. . . .	25	25

[1] Calculated from table 14.

[2] Calculated from table 4.

The two series of percentages given in table 1 are quite similar for all dietary essentials. For calories, iron, vitamin A, and the three B-vitamins the percentage increases in available food supplies per adult-male equivalent are slightly less than those per capita. For calcium, the reverse is true because of population changes. Millions of adults in the armed services were excluded, yet the 1944 when compared with the 1920 population was older. Adults need more of the major nutrients, with the exception of calcium, than do children. Hence, the average need of the 1944 population for calories and all the nutrients except calcium was greater than that of the 1920 population. Therefore, except for calcium, the percentage increases in the average per capita data give a slightly exaggerated trend. On the whole, however, average per person nutritional requirements of the United States population changed little from 1920 to 1944. Thus for the period covered by this report the per capita averages of nutrients are reasonably adequate for the study of trends in the nutritive value of the food supply.

EVALUATION OF THE ADEQUACY OF THE FOOD SUPPLY

The primary purpose of the present study is to measure trends in the nutritional quality of our national food supply. The quantities of nutrients presented in this publication are averages based on the best possible estimates of available per capita food supplies and on average composition figures for each commodity.

Several facts need to be mentioned in interpreting these data. In the first place, they are not directly comparable with the recommended dietary allowances of the National Research Council to which reference has already been made. These recommended requirements are for nutrients as ingested. They do not allow for nutrients wasted including those destroyed in food preparation. Before a judgment could be made as to the extent to which nutrients in the food supply meet or exceed the recommended dietary allowances, additional adjustment would have to be made for waste; for example, that occurring in family and restaurant kitchens, in storage, in food preparation, and on plates.

At the present time only rough estimates of losses due to waste can be made. Reliable information is still very limited. On the basis of the best available information, it seems probable that after allowance is made for these losses, the per capita nutrients in the food supply for the period of World War II are above recommended allowances. However, the question arises whether it can be assumed that for the period of World War II the food supply was sufficient to provide adequate diets for all. Family consumption studies have amply demonstrated that such a conclusion does not follow.

Food is unequally distributed among income groups, seasons of the year, and regions. Therefore, although national supplies appear adequate when viewed as averages, it cannot be concluded that people in all sections of the country, at all income levels and throughout all months of the year have adequate diets. It seems likely though, that in recent years an increasing proportion of families have had adequate or near-adequate diets.

APPENDIX A

Foods Included in the Study

Below is a list of the major foods, the quantities of which are included in the food groups reported in table 2.

DAIRY PRODUCTS, EXCLUDING BUTTER

- Milk:
  - Fresh whole
  - Fresh skim
  - Buttermilk
  - Condensed
  - Evaporated
  - Dried (including quantities used in commercially prepared products such as bread)
- Ice cream, sherbet, etc.
- Cream
- Cheese:
  - American type
  - Cottage and other skim milk
  - Other, whole or part whole milk
- Eggs

MEAT, POULTRY, AND FISH

- Meat:
  - Beef
  - Lamb and mutton
  - Offal, edible
  - Pork, lean meat
  - Veal
- Game
- Poultry:
  - Chicken
  - Turkey
- Fish and shellfish:
  - Fresh and frozen
  - Canned
  - Cured

FATS AND OILS

- Bacon and salt pork
- Butter
- Lard
- Margarine
- Other shortening
- Salad and cooking oil

DRY BEANS AND PEAS, SOYA PRODUCTS, AND NUTS

- Dry beans
- Dry peas
- Soya flour, flakes, grits
- Nuts

POTATOES AND SWEETPOTATOES

CITRUS FRUIT AND TOMATOES

- Fresh and canned citrus including juice:
  - Grapefruit
  - Lemons
  - Limes
  - Oranges
  - Tangerines
- Fresh tomatoes
- Canned tomatoes and tomato products

LEAFY, GREEN, AND YELLOW VEGETABLES

- Fresh:
  - Artichokes, globe
  - Asparagus
  - Beans, lima, green
  - Beans, snap
  - Cabbage
  - Carrots
  - Kale
  - Lettuce
  - Peas, green
  - Peppers
  - Spinach
  - Other greens

LEAFY, GREEN, AND YELLOW VEGETABLES (*continued*)

Canned:
- Asparagus
- Beans, lima
- Beans, snap
- Carrots
- Peas
- Pumpkin and squash
- Spinach
- Other greens

Frozen

OTHER VEGETABLES AND FRUIT

Fresh vegetables:
- Beets
- Cauliflower
- Celery
- Corn, sweet
- Cucumbers
- Eggplant
- Onions
- Other

Canned vegetables
- Beets
- Corn
- Mixed vegetables
- Pickles, cucumber
- Pimientos
- Sauerkraut
- Soups (other than tomato)
- Vegetable juice

Frozen vegetables

Fresh fruit:
- Apples
- Apricots
- Avocados
- Bananas
- Cherries
- Cranberries
- Figs
- Grapes
- Melons:
  - Cantaloups
  - Watermelons
- Peaches
- Pears
- Pineapple
- Plums and prunes
- Strawberries

OTHER VEGETABLES AND FRUIT (*continued*)

Canned fruit and juices (including sugar used in preparation)
- Apples and applesauce
- Apple juice
- Apricots
- Berries
- Cherries
- Cranberries
- Figs
- Fruit cocktail
- Fruit nectar and others
- Grape juice
- Olives
- Peaches
- Pears
- Pineapple
- Pineapple juice
- Plums and prunes
- Prune juice

Frozen fruit

Dried fruit:
- Apples
- Apricots
- Dates
- Figs
- Peaches
- Pears
- Prunes
- Raisins and currants

GRAIN PRODUCTS

Wheat:
- Cereals
- Flour, patent
- Flour, whole-wheat
- Macaroni and spaghetti

Corn:
- Corn cereals
- Corn meal
- Cornstarch
- Hominy

Barley products

Buckwheat flour

Oatmeal

Rice

Rye flour

SUGARS AND SIRUPS

Beet sugar) Includes all sugar except
Cane sugar) quantity used in dairy
products, canned fruit, etc.
Cane sirup
Corn sirup
Honey
Maple products
Molasses

BEVERAGES

Cocoa
Coffee
Tea

APPENDIX B

Enriched and Fortified Foods

The following data on the percentage of each product enriched or fortified are the best available and should be looked upon as approximations only.

WHITE FLOUR (and products made from white flour except macaroni and other pastes)

1909-40	No enrichment.
1941	20 percent enriched with iron, thiamine, and niacin to minimum levels promulgated by the U. S. Food and Drug Administration in 1941. (Federal Register, May 27, 1941.)
1942	50 percent enriched as in 1941.
1943	65 percent enriched. Three-fourths of this enriched as in 1941-42. One-fourth enriched with iron, thiamine, riboflavin, and niacin to the minimum levels promulgated by the U. S. Food and Drug Administration in 1943. (Federal Register, July 3, 1943.)
1944-45	65 percent enriched with iron, thiamine, riboflavin, and niacin to the minimum levels promulgated by the U. S. Food and Drug Administration in 1943.

WHEAT CEREALS

The nutritive value of wheat cereals was calculated as 50 percent shredded wheat and 50 percent farina.

1909-38	No fortification.
1939-41	50 percent of farina enriched with iron, thiamine, riboflavin, and niacin to the minimum levels promulgated by the U. S. Food and Drug Administration in 1941. (Federal Register, May 27, 1941.)
1942-45	100 percent of farina enriched as in 1939-41.

CORN CEREALS

(Nutritive value of corn flakes was used for all corn cereals other than corn meal.)

1909-38	No fortification.
1939-41	50 percent fortified to minimum amounts of thiamine, niacin, and iron suggested by the National Research Council for "restored" cereals (Bul. No. 110, Nov. 1944.)
1942-45	100 percent fortified as in 1939-41.

MARGARINE

1909-37	No fortification.
1938	65 percent fortified to a level of 9,000 International Units of vitamin A per pound.
1939	70 percent fortified as in 1938.
1940	75 percent fortified as in 1938.
1941	80 percent fortified as in 1938.
1942	85 percent fortified as in 1938.
1943	95 percent fortified as in 1938.
1944-45	100 percent fortified as in 1938.

TABLE 2.--*Apparent per capita food consumption, by major food groups, estimated retail weights, 1909-45*[1]

Year	Dairy products, excluding butter, in milk equivalents[2]	Eggs[3]	Meat, poultry, and fish[4]	Fats and oils, including fat cuts and butter[5]	Dry beans and peas, nuts, and soya flour[6]	Potatoes and sweetpotatoes	Citrus fruit and tomatoes	Leafy, green, and yellow vegetables	Other vegetables and fruit	Grain products	Sugar and sirups[7]	Cocoa, coffee, and tea[8]
	Quarts	*Number*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
1909	169	284	164	59	12	208	44	77	211	309	86	10
1910	160	297	157	59	12	209	44	74	205	306	89	9
1911	156	319	161	60	11	171	45	70	217	301	91	9
1912	175	302	155	58	12	192	46	75	230	300	89	11
1913	171	294	152	59	12	196	45	72	204	290	94	9
1914	164	286	148	62	12	174	52	73	225	287	93	10
1915	169	304	143	62	12	194	51	75	224	279	90	11
1916	168	290	148	62	13	158	48	73	204	289	91	12
1917	176	273	144	57	19	169	51	76	203	281	93	14
1918	188	275	150	60	18	188	48	84	202	251	92	12
1919	187	294	148	61	15	170	54	76	203	264	105	13
1920	187	290	144	57	13	166	54	88	225	249	102	13
1921	184	290	141	58	12	170	56	73	186	241	100	13
1922	183	306	146	62	12	171	53	80	227	246	118	13
1923	181	317	154	66	14	184	62	76	210	240	105	14
1924	188	314	152	66	17	166	63	84	219	236	115	14
1925	193	309	147	65	16	160	59	82	211	233	118	12
1926	195	329	146	65	16	141	59	83	240	233	120	14
1927	194	332	144	66	18	156	61	90	207	232	119	14
1928	195	328	140	67	17	166	57	85	229	239	121	13
1929	199	324	138	68	16	166	69	93	219	234	113	14
1930	199	319	137	67	16	146	60	88	216	226	124	14
1931	196	321	137	66	18	150	70	93	231	220	115	14
1932	196	302	138	66	16	155	66	92	204	210	109	14
1933	195	286	143	66	14	153	67	86	196	203	110	14
1934	193	278	152	66	17	153	68	94	194	201	109	14
1935	198	270	128	60	18	159	77	97	215	195	108	16
1936	203	278	140	64	19	144	78	92	208	202	110	16
1937	206	297	137	64	18	138	81	98	230	197	108	15
1938	208	298	136	65	19	144	86	107	219	198	107	16
1939	212	302	142	68	19	132	98	104	229	195	110	17
1935-39 average	205	289	137	64	19	143	84	100	220	197	109	16
1940	215	306	148	71	19	139	95	103	226	192	107	18
1941[9]	220	302	150	70	19	138	99	116	232	196	117	18
1942[9]	230	302	149	66	24	137	99	116	219	203	107	15
1943[9]	244	334	152	67	21	146	103	117	201	206	98	14
1944[9]	250	337	160	67	20	140	116	121	222	205	106	17
1945[9] (preliminary)	257	376	157	60	20	142	116	133	237	203	91	19

---

[1] Estimated from per capita data as usually reported by the Bureau of Agricultural Economics in The National Food Situation by means of average loss factors with the addition of unpublished estimates of supplies from town and city gardens and estimates of minor food items. Data for 1945 are preliminary.

[2] Milk equivalent calculated on the basis of protein and mineral content.

[3] Allows for breakage from farm to retail.

[4] Excluding bacon and other fat pork cuts. Includes edible offal and game.

[5] Actual-weight basis.

[6] Nuts on an unshelled basis.

[7] Excluding duplication in dairy products, canned fruit, etc.

[8] Roasted basis for cocoa and coffee.

[9] Civilian consumption only. Total civilian supplies divided by number of people eating out of those supplies, including allowance for members of armed forces on leave or eating in homes or civilian restaurants in this country for other reasons.

TABLE 3.--*Apparent per capita food consumption, by major food groups, estimated retail weights, 1909-45*[1]

(Index numbers: 1935-39 = 100)

Year	Dairy products, excluding butter, in milk equivalents[2]	Eggs[3]	Meat, poultry, and fish[4]	Fats and oils, including fat cuts and butter[5]	Dry beans and peas, nuts, and soya flour[6]	Potatoes and sweetpotatoes	Citrus fruit and tomatoes	Leafy, green, and yellow vegetables	Other vegetables and fruit	Grain products	Sugar and sirups[7]	Cocoa, coffee, and tea[8]
1909	82	98	120	92	63	145	52	77	96	157	79	62
1910	78	103	115	92	63	146	52	74	93	155	82	56
1911	76	110	118	94	58	120	54	70	99	153	83	56
1912	85	104	113	91	63	134	55	75	105	152	82	69
1913	83	102	111	92	63	137	54	72	93	147	86	56
1914	80	99	108	97	63	122	62	73	102	146	85	62
1915	82	105	104	97	63	136	61	75	102	142	83	69
1916	82	100	108	97	68	110	57	73	93	147	83	75
1917	86	94	105	89	100	118	61	76	92	143	85	88
1918	92	95	109	94	95	131	57	84	92	127	84	75
1919	91	102	108	95	79	119	64	76	92	134	96	81
1920	91	100	105	89	68	116	64	88	102	126	94	81
1921	90	100	103	91	63	119	67	73	85	122	92	81
1922	89	106	107	97	63	120	63	80	103	125	108	81
1923	88	110	112	103	74	129	74	76	95	122	96	88
1924	92	109	111	103	89	116	75	84	100	120	106	88
1925	94	107	107	102	84	112	70	82	96	118	108	75
1926	95	114	107	102	84	99	70	83	109	118	110	88
1927	95	115	105	103	95	109	73	90	94	118	109	88
1928	95	113	102	105	89	116	68	85	104	121	111	81
1929	97	112	101	106	84	116	82	93	100	119	104	88
1930	97	110	100	105	84	102	71	88	98	115	114	88
1931	96	111	100	103	95	105	83	93	105	112	106	88
1932	96	104	101	103	84	108	79	92	93	107	100	88
1933	95	99	104	103	74	107	80	86	89	103	101	88
1934	94	96	111	103	89	107	81	94	88	102	100	88
1935	97	93	93	94	95	111	92	97	98	99	99	100
1936	99	96	102	100	100	101	93	92	95	103	101	100
1937	100	103	100	100	95	97	96	98	105	100	99	94
1938	101	103	99	102	100	101	102	107	100	101	98	100
1939	103	104	104	106	100	92	117	104	104	99	101	106
1940	105	106	108	111	100	97	113	103	103	97	98	112
1941[9].	107	104	109	109	100	97	118	116	105	99	107	112
1942[9].	112	104	109	103	126	96	118	116	100	103	98	94
1943[9].	119	116	111	105	111	102	123	117	91	106	90	88
1944[9].	122	117	117	105	105	98	138	121	101	104	97	106
1945[9] (preliminary)	125	130	115	94	105	99	138	133	108	103	83	119

---

[1] Estimated from per capita data as usually reported by the Bureau of Agricultural Economics in The National Food Situation by means of average loss factors with the addition of unpublished estimates of supplies from town and city gardens and estimates of minor food items. Data for 1945 are preliminary.

[2] Milk equivalent calculated on the basis of protein and mineral content.

[3] Allows for breakage from farm to retail.

[4] Excluding bacon and other fat pork cuts. Includes edible offal and game.

[5] Actual-weight basis.

[6] Nuts on an unshelled basis.

[7] Excluding duplication in dairy products, canned fruit, etc.

[8] Roasted basis for cocoa and coffee.

[9] Civilian consumption only. Total civilian supplies divided by number of people eating out of those supplies, including allowance for members of armed forces on leave or eating in homes or civilian restaurants in this country for other reasons.

TABLE 4.--*Nutrients available for consumption per capita per day, 1909-45*[1]

Year	Food energy	Protein	Fat	Carbo-hydrate	Calcium	Iron	Vitamin A value	Thiamine (vitamin B_1)	Riboflavin	Niacin	Ascorbic acid (vitamin C)
	Calories	*Grams*	*Grams*	*Grams*	*Grams*	*Milli-grams*	*International Units*	*Milligrams*	*Milli-grams*	*Milli-grams*	*Milligrams*
1909	3,560	101	126	503	0.78	15.5	7,700	1.81	1.80	18.1	106
1910	3,520	99	124	501	.75	15.2	7,500	1.74	1.73	17.6	104
1911	3,500	99	125	494	.74	15.0	7,300	1.75	1.73	17.4	96
1912	3,520	100	124	499	.80	15.0	7,500	1.76	1.80	17.3	103
1913	3,480	96	125	492	.78	14.6	7,300	1.71	1.77	17.1	101
1914	3,480	97	127	487	.76	14.3	7,200	1.67	1.71	16.5	101
1915	3,440	95	126	481	.77	14.4	7,500	1.68	1.73	16.7	105
1916	3,460	95	129	481	.77	14.5	7,400	1.67	1.72	16.5	95
1917	3,430	98	123	482	.80	15.0	7,600	1.63	1.78	17.2	99
1918	3,380	96	130	453	.84	15.3	8,000	1.69	1.86	17.5	105
1919	3,480	96	130	480	.84	15.0	8,000	1.65	1.84	16.8	101
1920	3,350	93	125	465	.84	14.6	8,000	1.63	1.79	16.1	108
1921	3,260	91	124	447	.81	13.9	7,600	1.59	1.75	15.5	100
1922	3,460	93	129	483	.82	14.3	8,000	1.65	1.79	16.1	106
1923	3,450	94	135	463	.81	14.6	7,700	1.73	1.83	16.8	109
1924	3,490	94	136	472	.84	14.7	7,300	1.72	1.84	16.5	108
1925	3,460	93	135	470	.85	14.1	7,100	1.62	1.83	16.3	103
1926	3,480	93	134	474	.86	14.1	7,400	1.60	1.85	15.8	104
1927	3,470	92	135	470	.86	14.4	7,800	1.66	1.85	16.1	106
1928	3,540	93	136	485	.86	14.4	7,600	1.70	1.85	16.3	105
1929	3,480	92	137	469	.88	14.0	8,000	1.66	1.86	15.9	112
1930	3,460	91	134	471	.87	14.0	7,600	1.63	1.83	15.4	101
1931	3,400	90	135	456	.86	13.9	7,900	1.65	1.86	15.8	110
1932	3,290	87	133	435	.86	13.5	8,200	1.62	1.83	15.4	109
1933	3,250	86	133	427	.85	13.5	8,000	1.59	1.80	15.3	105
1934	3,270	89	133	426	.85	13.9	8,100	1.59	1.82	16.1	108
1935	3,170	85	125	427	.87	13.5	8,200	1.47	1.78	14.9	115
1936	3,270	90	130	432	.88	13.8	7,800	1.52	1.84	15.6	108
1937	3,240	89	132	426	.89	13.7	8,100	1.50	1.84	15.3	112
1938	3,260	91	133	426	.91	13.9	8,200	1.56	1.89	15.5	118
1939	3,330	91	138	428	.93	14.3	8,300	1.61	1.92	15.8	121
1935-39 average . .	3,250	89	132	428	.90	13.8	8,100	1.54	1.86	15.4	115
1940	3,350	93	142	424	.93	13.9	8,200	1.69	1.93	16.4	120
1941[2]	3,420	93	143	441	.95	14.6	8,300	1.76	1.97	16.6	121
1942[2]	3,360	96	138	432	1.00	15.5	8,800	1.96	2.06	17.6	126
1943[2]	3,390	98	141	430	1.04	16.5	9,200	2.18	2.20	18.8	126
1944[2]	3,460	100	144	439	1.05	18.2	9,400	2.27	2.49	21.3	135
1945[2] (preliminary)	3,330	100	137	424	1.09	18.6	9,700	2.19	2.52	21.3	140

[1] Quantities of nutrients computed by Bureau of Human Nutrition and Home Economics on the basis of estimates of apparent consumption (retail basis), including estimates of foods supplied by farm and city gardens, prepared by Bureau of Agricultural Economics. No deductions have been made in the nutrient estimates for the loss or waste of food in the home or for destruction or loss of nutrients during the preparation of food.

In 1941-45, the data for iron, thiamine, riboflavin, and niacin include the amounts of these nutrients added to prepared cereals and to white flour (or bread) under the enrichment program.

[2] Civilian only.

TABLE 5.--*Nutrients available for consumption per capita per day, 1909-45*[1]

(Index numbers: 1935-39 = 100)

Year	Food energy	Protein	Fat	Carbo-hydrate	Calcium	Iron	Vitamin A value	Thiamine (vitamin B_1)	Riboflavin	Niacin	Ascorbic acid (vitamin C)
1909	110	113	95	118	87	112	95	118	97	118	92
1910	108	111	94	117	83	110	93	113	93	114	90
1911	108	111	95	115	82	109	90	114	93	113	83
1912	108	112	94	117	89	109	93	114	97	112	90
1913	107	108	95	115	87	106	90	111	95	111	88
1914	107	109	96	114	84	104	89	108	92	107	88
1915	106	107	95	112	86	104	93	109	93	108	91
1916	106	107	98	112	86	105	91	108	92	107	83
1917	106	110	93	113	89	109	94	106	96	112	86
1918	104	108	98	106	93	111	99	110	100	114	91
1919	107	108	98	112	93	109	99	107	99	109	88
1920	103	104	95	109	93	106	99	106	96	105	94
1921	100	102	94	104	90	101	94	103	94	101	87
1922	106	104	98	113	91	104	99	107	96	105	92
1923	106	106	102	108	90	106	95	112	98	109	95
1924	107	106	103	110	93	107	90	112	99	107	94
1925	106	104	102	110	94	102	88	105	98	106	90
1926	107	104	102	111	96	102	91	104	99	103	90
1927	107	103	102	110	96	104	96	108	99	105	92
1928	109	104	103	113	96	104	94	110	99	106	91
1929	107	103	104	110	98	101	99	108	100	103	97
1930	106	102	102	110	97	101	94	106	98	100	88
1931	105	101	102	107	96	101	98	107	100	103	96
1932	101	98	101	102	96	98	101	105	98	100	95
1933	100	97	101	100	94	98	99	103	97	99	91
1934	101	100	101	100	94	101	100	103	98	105	94
1935	98	96	95	100	97	98	101	95	96	97	100
1936	101	101	98	101	98	100	96	99	99	101	94
1937	100	100	100	100	99	99	100	97	99	99	97
1938	100	102	101	100	101	101	101	101	102	101	103
1939	102	102	105	100	103	104	102	105	103	103	105
1940	103	104	108	99	103	101	101	110	104	106	104
1941[2]	105	104	108	103	106	106	102	114	106	108	105
1942[2]	103	108	105	101	111	112	109	127	111	114	110
1943[2]	104	110	107	100	116	120	114	142	118	122	110
1944[2]	106	112	109	103	117	132	116	147	134	138	117
1945[2] (preliminary)	102	112	104	99	121	135	120	142	135	138	122

[1] Quantities of nutrients computed by Bureau of Human Nutrition and Home Economics on the basis of estimates of apparent consumption (retail basis), including estimates of foods supplied by farm and city gardens, prepared by Bureau of Agricultural Economics. No deductions have been made in the nutrient estimates for the loss or waste of food in the home or for destruction or loss of nutrients during the preparation of food.

In 1941-45, the data for iron, thiamine, riboflavin, and niacin include the amounts of these nutrients added to prepared cereals and to white flour (or bread) under the enrichment program.

[2] Civilian only.

TABLE 6.--*Nutritive value of the daily per capita food supply for iron, thiamine, riboflavin, and niacin, with and without enrichment of grain products*[1] *1935-39, 1941, 1942, 1943, 1944, and 1945*

Year	Without enrichment				With enrichment			
	Iron	Thiamine	Riboflavin	Niacin	Iron	Thiamine	Riboflavin	Niacin
	Milligrams	*Milligrams*	*Milligrams*	*Milligrams*	*Milligrams*	*Milligrams*	*Milligrams*	*Milligrams*
1935-39	13.8	1.54	1.86	15.4	13.8	1.54	1.86	15.4
1941	14.3	1.64	1.97	16.4	14.6	1.76	1.97	16.6
1942	14.9	1.67	2.05	17.1	15.5	1.96	2.06	17.6
1943	15.3	1.78	2.12	17.5	16.5	2.18	2.20	18.8
1944	15.5	1.80	2.20	17.9	18.2	2.27	2.49	21.3
1945 (preliminary) . .	15.9	1.72	2.24	17.9	18.6	2.19	2.52	21.3

[1] Both the enrichment of white flour and the fortification of breakfast cereals are included here under the term "enrichment."

TABLE 7.--*Relative amounts of iron, thiamine, riboflavin, and niacin in the food supply, without enrichment of grain products, 1941, 1942, 1943, 1944, and 1945, as compared with 1935-39*

Year	Iron	Thiamine	Riboflavin	Niacin
1935-39	100	100	100	100
1941	104	106	106	106
1942	108	108	110	111
1943	111	116	114	114
1944	112	117	118	116
1945 (preliminary)	115	112	120	116

TABLE 8.--*Amount and percentage of iron, thiamine, riboflavin, and niacin obtained solely from the enrichment of grain products, 1941, 1942, 1943, 1944, and 1945*[1]

Year	Iron		Thiamine		Riboflavin		Niacin	
	Milligrams	*Percent*	*Milligrams*	*Percent*	*Milligrams*	*Percent*	*Milligrams*	*Percent*
1941	0.3	2	0.12	7	0	0	0.2	1
1942	.6	4	.29	17	.01	.5	.5	3
1943	1.2	8	.40	22	.08	4	1.3	7
1944	2.7	17	.47	26	.29	13	3.4	19
1945 (preliminary) . . .	2.7	17	.47	27	.28	12	3.4	19

[1] The increase due to the fortification of breakfast cereals is a relatively small proportion of the total increase, amounting at no time to more than 1 percent.

TABLE 9.--*Percentage of total nutrients contributed by major food groups, 1917-18*

Food group	Calories	Protein	Fat	Carbohydrate	Calcium	Iron	Vitamin A value	Thiamine	Riboflavin	Niacin	Ascorbic acid
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Dairy products, excluding butter . . .	10.2	18.6	16.7	4.7	70.5	2.6	11.4	9.6	44.1	2.9	5.9
Eggs	1.8	5.2	3.2	1/	2.4	6.6	5.5	2.4	7.1	1/	0
Meat, poultry, and fish	10.7	26.8	22.2	1/	2.2	27.0	8.3	30.2	19.2	44.8	2.0
Fats and oils, including fat cuts and butter .	16.7	2.1	49.9	1/	.6	1.3	7.8	4.2	1.1	2.3	0
Dry beans and peas, nuts, and soya flour .	2.6	4.1	3.2	1.7	2.4	7.9	1/	5.4	2.7	8.0	1/
Potatoes and sweetpotatoes	5.0	4.1	1/	8.1	3.2	9.2	26.0	11.4	4.4	11.5	32.3
Citrus fruit and tomatoes	.5	1.0	1/	.9	1.0	2.0	5.6	1.8	1.1	1.7	14.7
Leafy, green, and yellow vegetables . .	.8	1.0	1/	1.1	4.1	4.6	25.2	4.8	4.4	2.9	27.5
Other vegetables and fruit	3.9	2.1	.8	6.4	4.1	7.2	9.0	5.4	4.4	5.2	17.6
Grain products	34.6	35.0	3.2	53.8	7.3	23.0	1.2	24.8	9.9	19.5	0
Sugar and sirups	12.8	1/	0	23.1	2.2	7.9	0	1/	.5	.6	1/
Cocoa	.4	1/	.8	.2	0	.7	0	0	1.1	.6	0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than 0.05 percent.

TABLE 10.--*Percentage of total nutrients contributed by major food groups, 1925-29*

Food group	Calories	Protein	Fat	Carbohydrate	Calcium	Iron	Vitamin A value	Thiamine	Riboflavin	Niacin	Ascorbic acid
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Dairy products, excluding butter . . .	10.4	19.4	15.6	5.3	71.7	2.8	12.0	10.3	46.5	3.1	5.7
Eggs	2.0	6.5	3.7	1/	2.8	8.5	6.7	3.0	8.1	1/	0
Meat, poultry, and fish	10.4	26.8	21.5	1/	2.2	26.7	7.5	32.9	18.4	47.2	.9
Fats and oils, including fat cuts and butter .	18.5	2.2	52.6	1/	.7	1.4	9.7	4.8	1.1	2.5	0
Dry beans and peas, nuts, and soya flour .	2.2	4.3	2.2	1.7	2.3	8.5	1/	4.8	2.7	6.2	1/
Potatoes and sweetpotatoes	4.3	3.2	1/	7.0	2.6	8.5	20.8	10.3	3.8	11.2	27.4
Citrus fruit and tomatoes	.7	1.1	1/	1.1	1.4	2.1	5.8	2.4	1.1	1.9	18.9
Leafy, green, and yellow vegetables . .	.9	1.1	1/	.8	4.2	5.6	26.3	5.5	4.3	3.1	27.3
Other vegetables and fruit	4.1	2.2	.7	7.2	4.5	8.5	10.5	6.0	4.8	5.6	19.8
Grain products	29.8	33.2	3.0	46.7	6.4	20.4	.7	20.0	8.1	18.6	0
Sugar and sirups	16.3	1/	0	30.0	1.2	6.3	0	1/	1/	1/	1/
Cocoa	.4	1/	.7	.2	0	.7	0	0	1.1	.6	0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than 0.05 percent

TABLE 11.--*Percentage of total nutrients contributed by major food groups, 1935-39*

Food group	Calories	Protein	Fat	Carbohydrate	Calcium	Iron	Vitamin A value	Thiamine	Riboflavin	Niacin	Ascorbic acid
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Dairy products, excluding butter	11.4	21.3	16.7	5.8	72.7	3.6	11.3	11.7	49.2	3.9	5.2
Eggs	1.9	5.6	3.8	1/	2.5	8.0	5.6	2.6	7.0	1/	0
Meat, poultry, and fish	10.4	27.0	20.5	1/	2.1	24.8	6.4	30.0	17.3	48.1	.9
Fats and oils, including fat cuts and butter	19.4	2.2	52.1	1/	.6	1.4	8.6	4.5	1.1	1.9	0
Dry beans and peas, nuts, and soya flour	2.7	4.5	3.0	2.1	2.6	10.1	1/	6.5	3.2	7.8	1/
Potatoes and sweetpotatoes	4.2	3.4	1/	7.2	2.2	8.0	19.8	10.4	3.2	10.4	22.6
Citrus fruit and tomatoes	1.0	1.1	1/	1.6	1.8	2.9	6.6	3.2	1.6	2.6	24.3
Leafy, green, and yellow vegetables	1.1	2.2	1/	1.4	4.7	6.5	31.5	6.5	4.9	3.2	27.9
Other vegetables and fruit	4.3	3.4	.8	7.5	4.6	9.4	9.7	7.1	4.9	5.9	19.1
Grain products	27.0	28.2	2.3	43.5	5.2	17.4	.5	17.5	6.5	15.6	0
Sugar and sirups	16.0	1/	0	30.4	1.0	6.5	0	1/	1/	1/	1/
Cocoa	.6	1.1	.8	.5	0	1.4	0	0	1.1	.6	0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than 0.05 percent.

TABLE 12.--*Percentage of total nutrients contributed by major food groups, 1944-45*

Food group	Calories	Protein	Fat	Carbohydrate	Calcium	Iron	Vitamin A value	Thiamine	Riboflavin	Niacin	Ascorbic acid
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Dairy products, excluding butter	13.7	24.0	18.6	7.6	74.3	3.3	11.7	9.9	44.8	3.3	5.8
Eggs	2.3	7.0	4.3	1/	2.4	7.6	5.9	2.7	6.4	1/	0
Meat, poultry, and fish	11.5	28.0	22.1	1/	1.9	23.4	7.6	25.6	16.0	40.4	1.4
Fats and oils, including fat cuts and butter	18.3	2.0	48.6	1/	.4	1.1	5.9	3.6	.8	1.9	0
Dry beans and peas, nuts, and soya flour	2.8	5.0	2.9	2.1	2.2	7.1	.1	4.5	2.0	7.0	1/
Potatoes and sweetpotatoes	3.9	3.0	1/	6.9	1.9	5.4	16.4	6.7	2.4	7.5	18.9
Citrus fruit and tomatoes	1.4	1.0	1/	2.3	2.2	3.3	7.5	3.1	1.6	2.8	29.7
Leafy, green, and yellow vegetables	1.4	2.0	1/	1.9	4.9	6.5	35.4	5.8	4.8	3.3	28.3
Other vegetables and fruit	4.1	2.0	.7	7.2	4.0	7.1	9.1	4.5	4.0	4.7	15.9
Grain products	26.5	26.0	2.1	44.6	4.5	28.2	.4	33.6	16.0	28.1	0
Sugar and sirups	13.6	1/	0	26.9	1.3	6.5	0	1/	.4	.5	1/
Cocoa	.5	1/	.7	.5	0	.5	0	0	.8	.5	0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than 0.05 percent.

TABLE 13.--*Recommended dietary allowances*[1] *and per capita dietary requirements based on population statistics for 1920, 1930, 1940, and 1944*[2]

Item	Food energy	Protein	Calcium	Iron	Vitamin A value	Thiamine	Riboflavin	Niacin	Ascorbic acid
	Calories	*Grams*	*Grams*	*Milligrams*	*International Units*	*Milligrams*	*Milligrams*	*Milligrams*	*Milligrams*
Man:									
Sedentary	2,500	70	0.8	12	5,000	1.2	1.6	12	75
Moderately active	3,000	70	.8	12	5,000	1.5	2.0	15	75
Very active	4,500	70	.8	12	5,000	2.0	2.6	20	75
Woman:									
Sedentary	2,100	60	.8	12	5,000	1.1	1.5	11	70
Moderately active	2,500	60	.8	12	5,000	1.2	1.6	12	70
Very active	3,000	60	.8	12	5,000	1.5	2.0	15	70
Pregnancy (latter half)	2,500	85	1.5	15	6,000	1.8	2.5	18	100
Lactation	3,000	100	2.0	15	8,000	2.0	3.0	20	150
Children up to 12 years:									
Under 1 year	100/2.2 lb. (1 kg.)	3.5/2.2 lb. (1 kg.)	1.0	6	1,500	.4	.6	4	30
1-3 years	1,200	40	1.0	7	2,000	.6	.9	6	35
4-6 years	1,600	50	1.0	8	2,500	.8	1.2	8	50
7-9 years	2,000	60	1.0	10	3,500	1.0	1.5	10	60
10-12 years	2,500	70	1.2	12	4,500	1.2	1.8	12	75
Children over 12 years:									
Girls, 13-15 years	2,600	80	1.3	15	5,000	1.3	2.0	13	80
Girls, 16-20 years	2,400	75	1.0	15	5,000	1.2	1.8	12	80
Boys, 13-15 years	3,200	85	1.4	15	5,000	1.5	2.0	15	90
Boys, 16-20 years	3,800	100	1.4	15	6,000	1.8	2.5	18	100
Weighted recommended allowance per capita daily (calculated by application of population statistics to the above table) for the following years:									
1920	2,560	65	.96	11.6	4,500	1.26	1.74	12.6	70
1930	2,570	65	.95	11.7	4,560	1.26	1.74	12.6	71
1940	2,610	66	.94	11.8	4,640	1.28	1.76	12.8	72
1944 (civilians only)	2,600	65	.94	11.7	4,560	1.28	1.76	12.8	70

[1] National Research Council, Recommended Dietary Allowances. Reprint and Circular Series No. 122. Revised 1945.

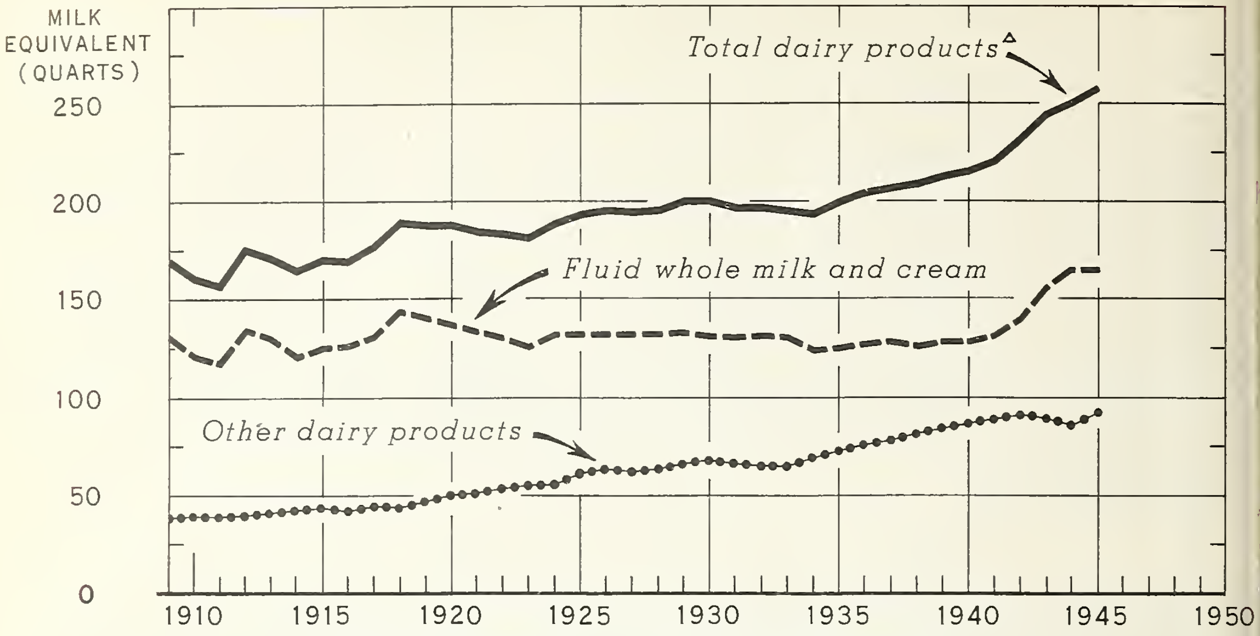
[2] The population weights used for each of the different sex and age groups for which allowances are recommended were obtained from Census figures for the specified years. The percentage breakdown of the adult groups in 1920, 1930, and 1940 into the three activity groups for which allowances are recommended was based upon an unpublished study by BHNHE of occupational groups as reported in the 1940 Census. The 1944 breakdown (for civilians only) was based upon a joint study by BAE and BHNHE and attempted to take account of the increased tempo of wartime living as well as the high level of employment.

TABLE 14.--*Nutritive value of the food supply per adult-male equivalent, 1920, 1930, 1940, and 1944*[1]

	Food energy	Protein	Calcium	Iron	Vitamin A value	Thiamine	Riboflavin	Niacin	Ascorbic acid
	Calories	*Grams*	*Grams*	*Milligrams*	*International Units*	*Milligrams*	*Milligrams*	*Milligrams*	*Milligrams*
1920	3,930	100	0.70	15.1	8,900	1.94	2.06	19.2	116
1930	4,040	98	.73	14.4	8,300	1.94	2.10	18.3	107
1940	3,850	99	.79	14.1	8,800	1.98	2.19	19.2	125
1944 (civilian)	3,990	108	.89	18.7	10,300	2.66	2.83	25.0	145

[1] Adjustment from per capita values (table 4) made by means of a ratio between the weighted average per capita recommended dietary allowances of the National Research Council or each specified year and the National Research Council's recommended allowance for the moderately active man. For further explanation, see text, page 10.

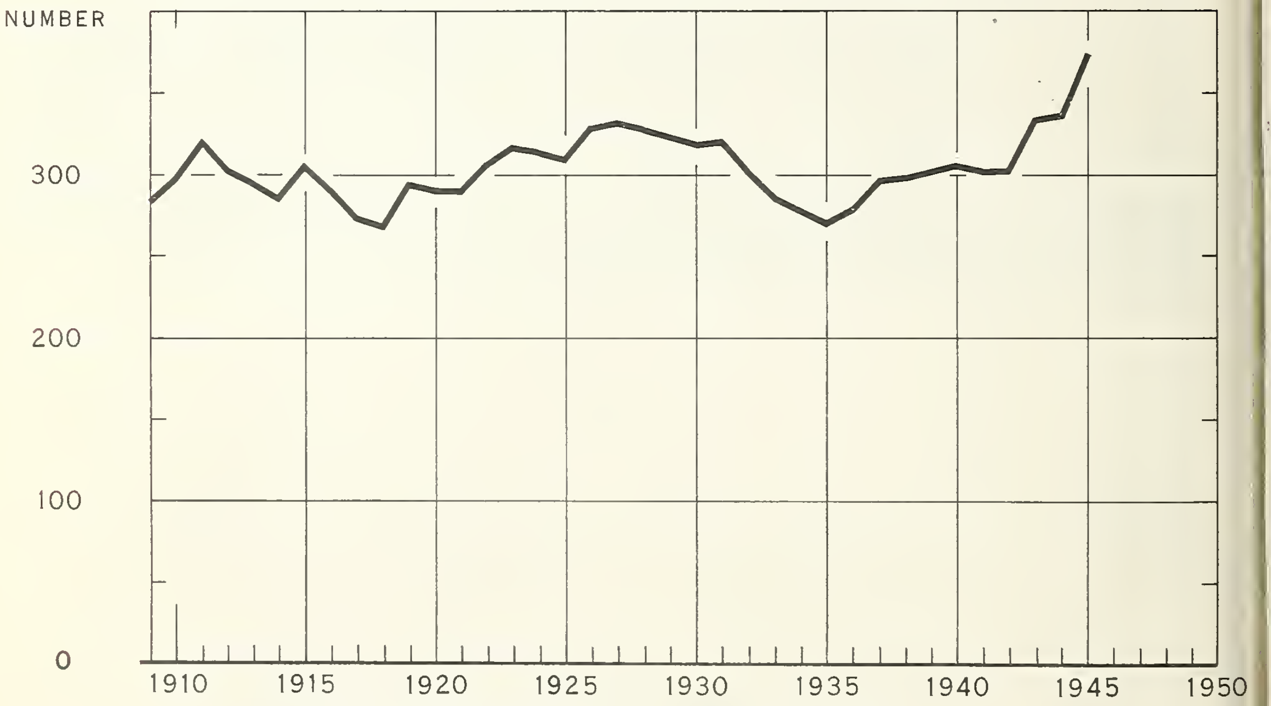
DAIRY PRODUCTS, EXCLUDING BUTTER: ANNUAL PER CAPITA CONSUMPTION, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.
△ MILK EQUIVALENT ON BASIS OF PROTEIN AND MINERAL CONTENT.

Figure 1

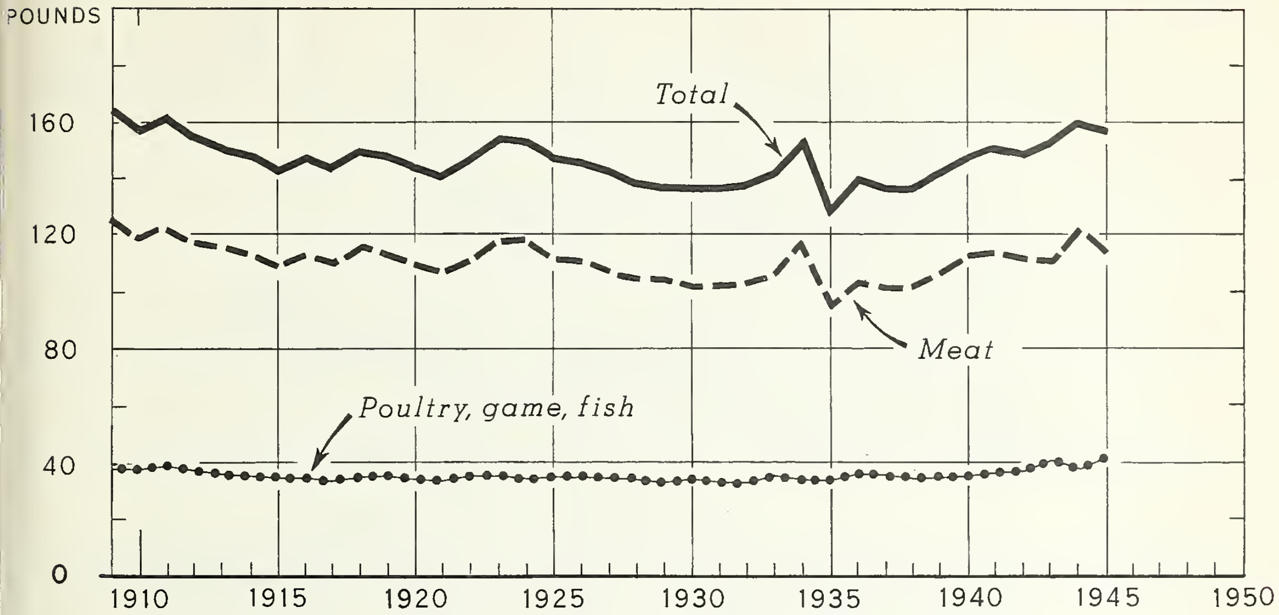
EGGS: ANNUAL PER CAPITA CONSUMPTION, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.
INCLUDES ALLOWANCE FOR BREAKAGE FROM FARM TO RETAIL.

Figure 2

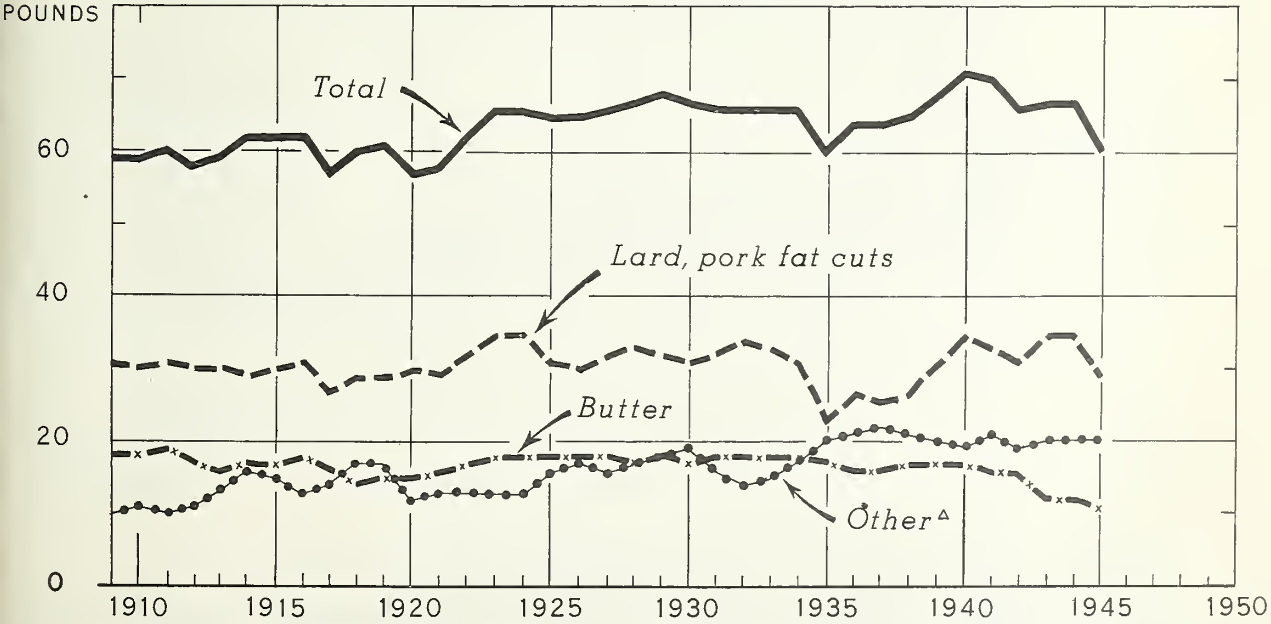
MEATS, POULTRY, GAME, FISH: ANNUAL PER CAPITA CONSUMPTION, ESTIMATED RETAIL WEIGHTS (EXCLUDING PORK FAT CUTS), 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 3

FATS AND OILS, INCLUDING BUTTER AND PORK FAT CUTS: ANNUAL PER CAPITA CONSUMPTION, 1909-45

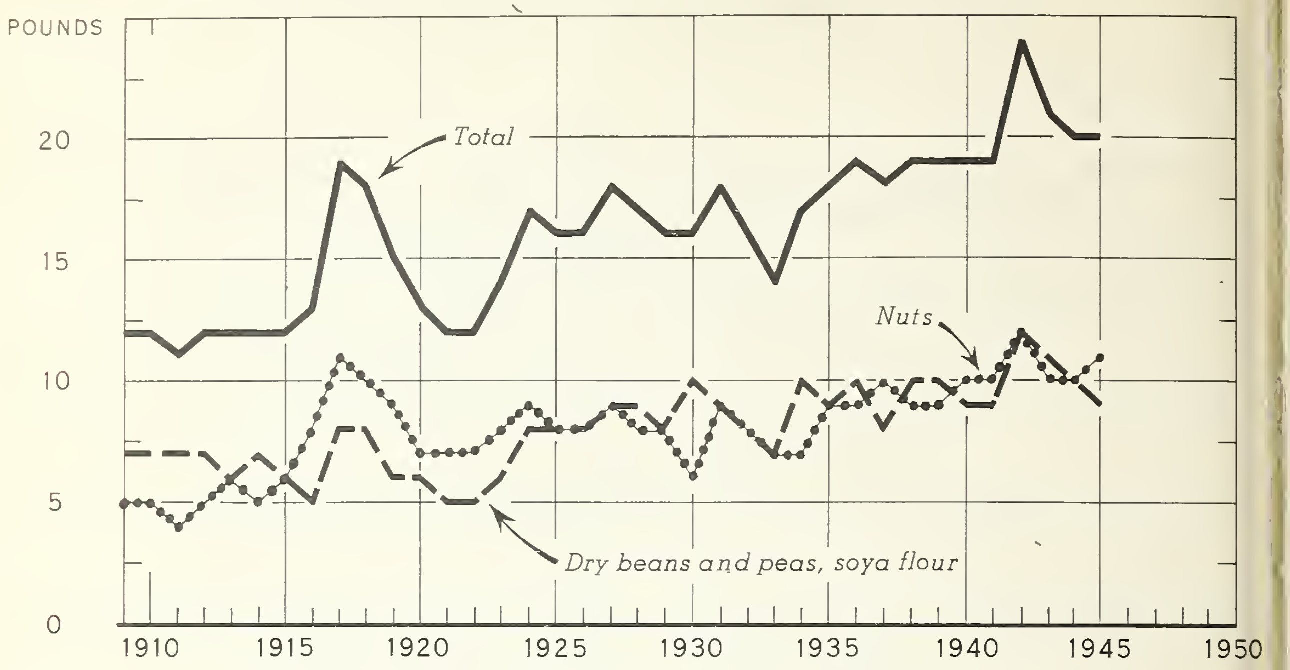


ESTIMATED RETAIL WEIGHTS. CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

△ MARGARINE, SHORTENING, OTHER EDIBLE OILS.

Figure 4

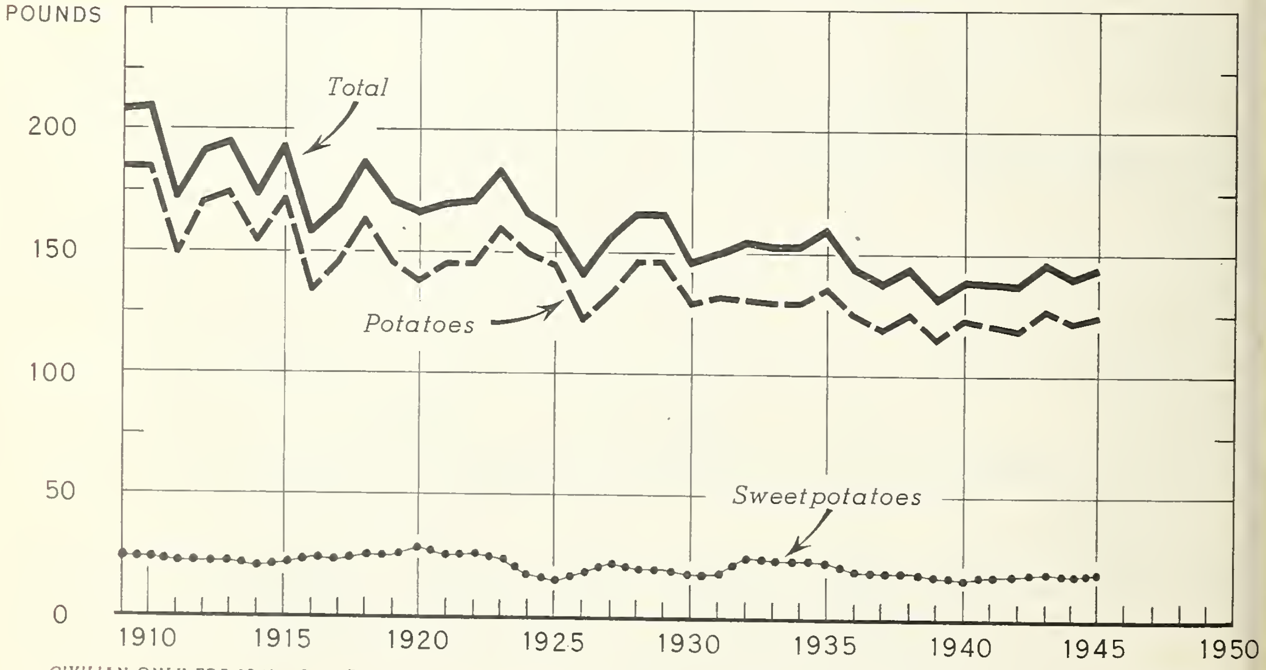
DRY BEANS, PEAS, SOYA FLOUR, AND NUTS: ANNUAL PER CAPITA CONSUMPTION, ESTIMATED RETAIL WEIGHTS, 1909-45



NUTS ON UNSHELLED BASIS. CIVILIAN ONLY 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 5

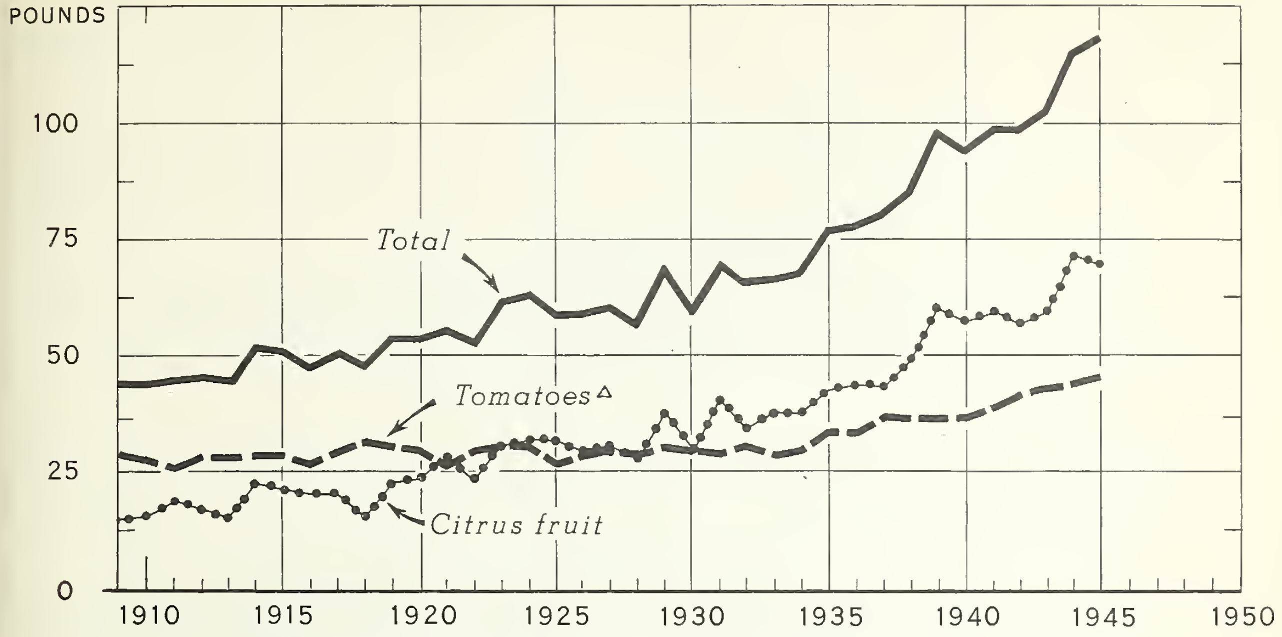
POTATOES AND SWEETPOTATOES: ANNUAL PER CAPITA CONSUMPTION, ESTIMATED RETAIL WEIGHTS, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY. INCLUDES PRODUCE FROM TOWN AND CITY GARDENS.

Figure 6

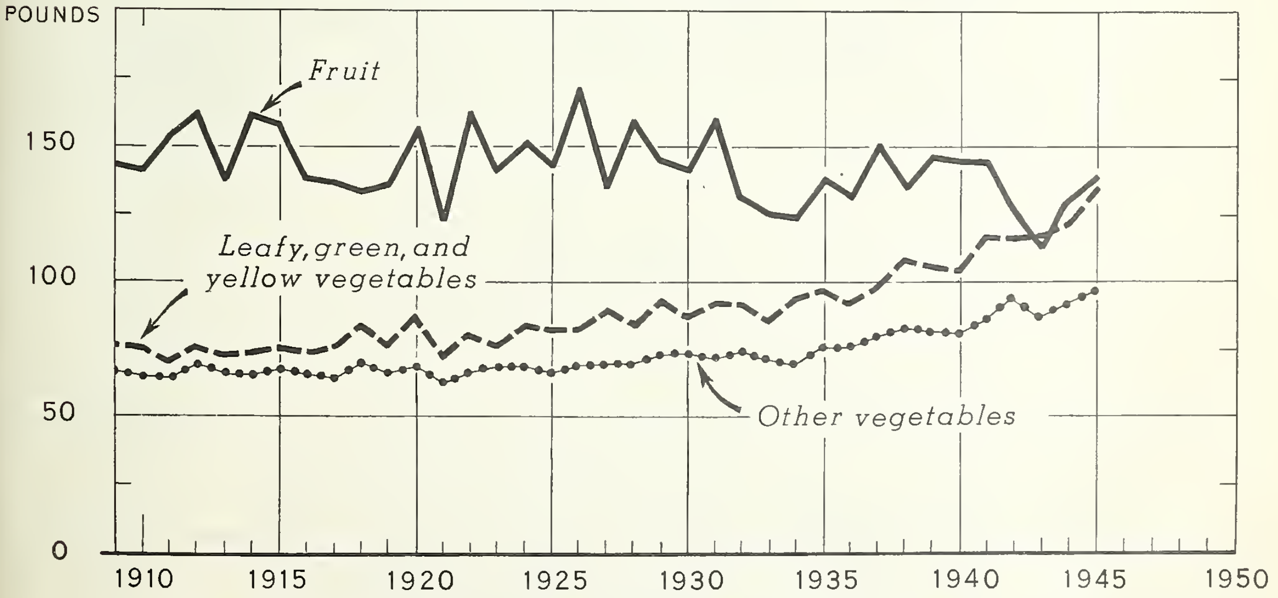
CITRUS FRUIT AND TOMATOES: ANNUAL PER CAPITA CONSUMPTION, ESTIMATED RETAIL WEIGHTS, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.
△ INCLUDES PRODUCE FROM TOWN AND CITY GARDENS.

Figure 7

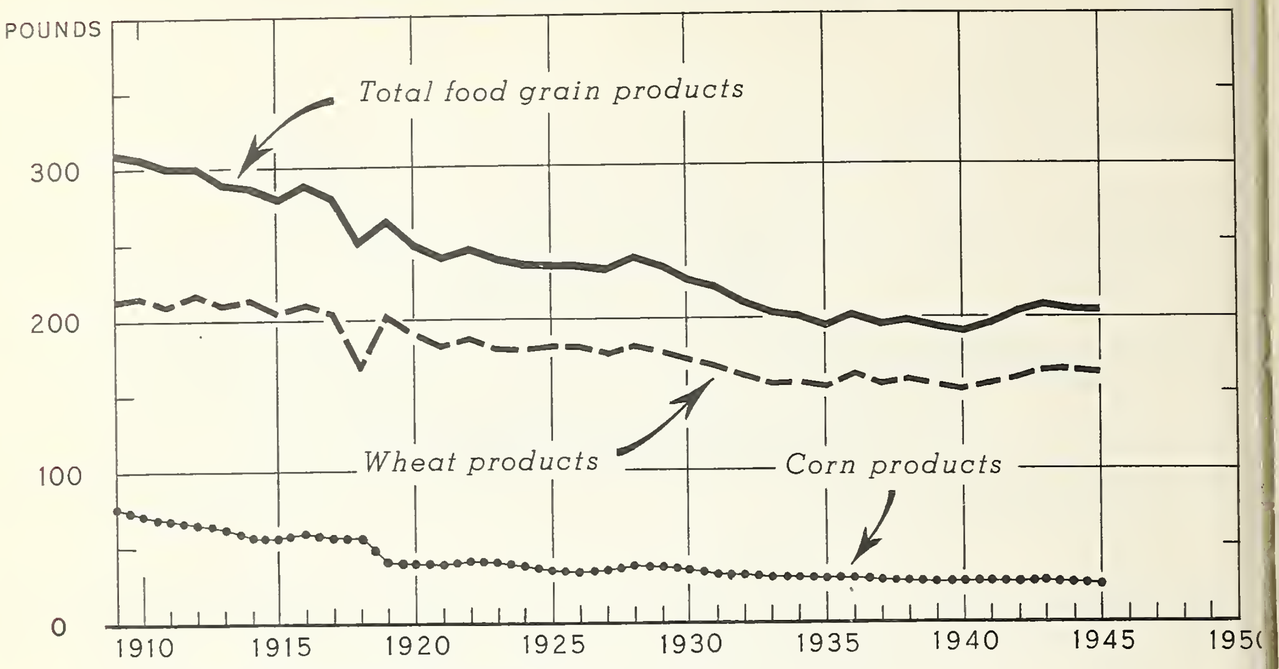
FRUITS AND VEGETABLES OTHER THAN CITRUS AND TOMATOES: ANNUAL PER CAPITA CONSUMPTION, ESTIMATED RETAIL WEIGHTS, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY. INCLUDES PRODUCE FROM TOWN AND CITY GARDENS.

Figure 8

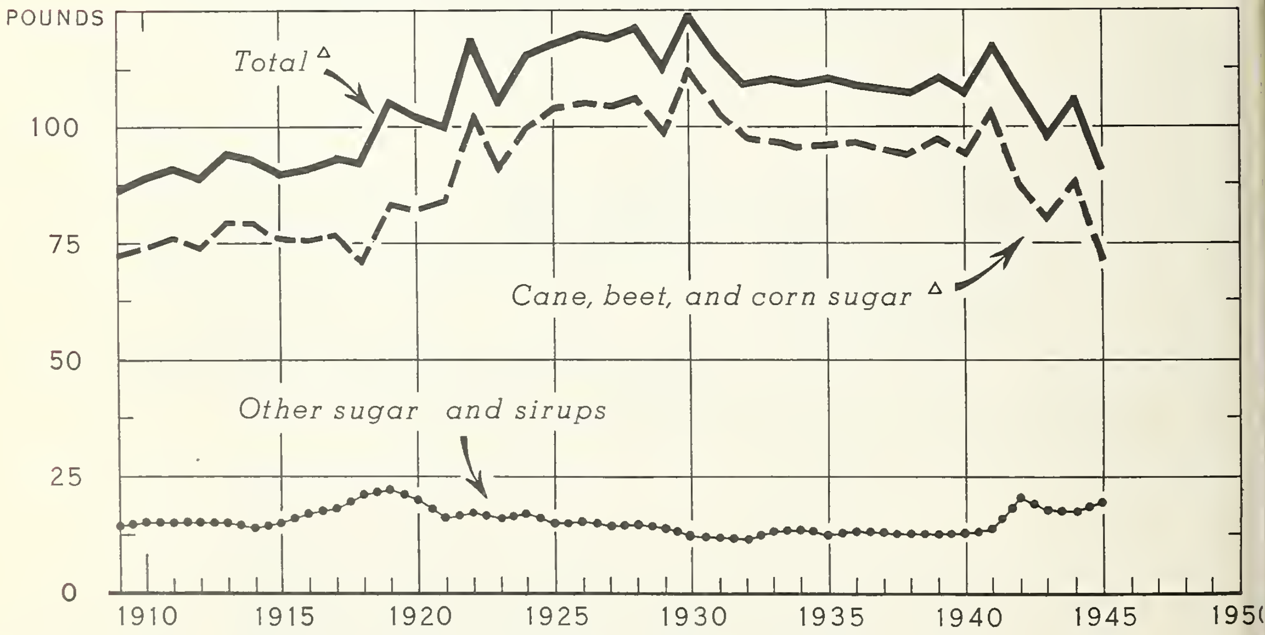
FOOD GRAIN PRODUCTS: ANNUAL PER CAPITA CONSUMPTION, 1909-45



INCLUDING WHEAT FLOUR, CORN MEAL, ETC. CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 9

SUGAR AND SIRUPS: ANNUAL PER CAPITA CONSUMPTION, 1909-45

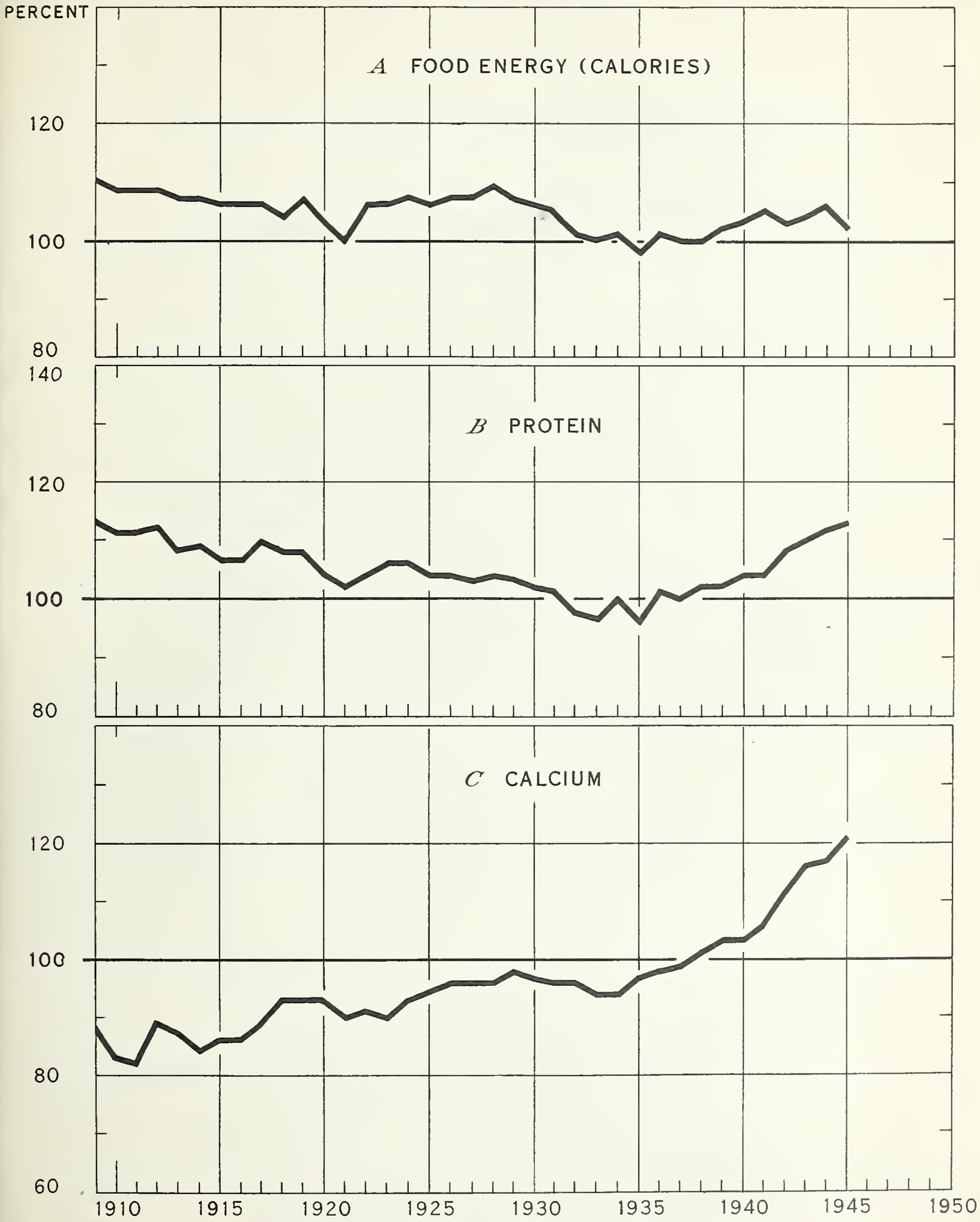


CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.
△EXCLUDING SMALL QUANTITIES USED IN DAIRY PRODUCTS, CANNED FRUIT, ETC.

Figure 10

FOOD ENERGY (CALORIES), PROTEIN AND CALCIUM IN THE PER CAPITA FOOD SUPPLY, 1909-45

INDEX NUMBERS (1935-39 = 100)

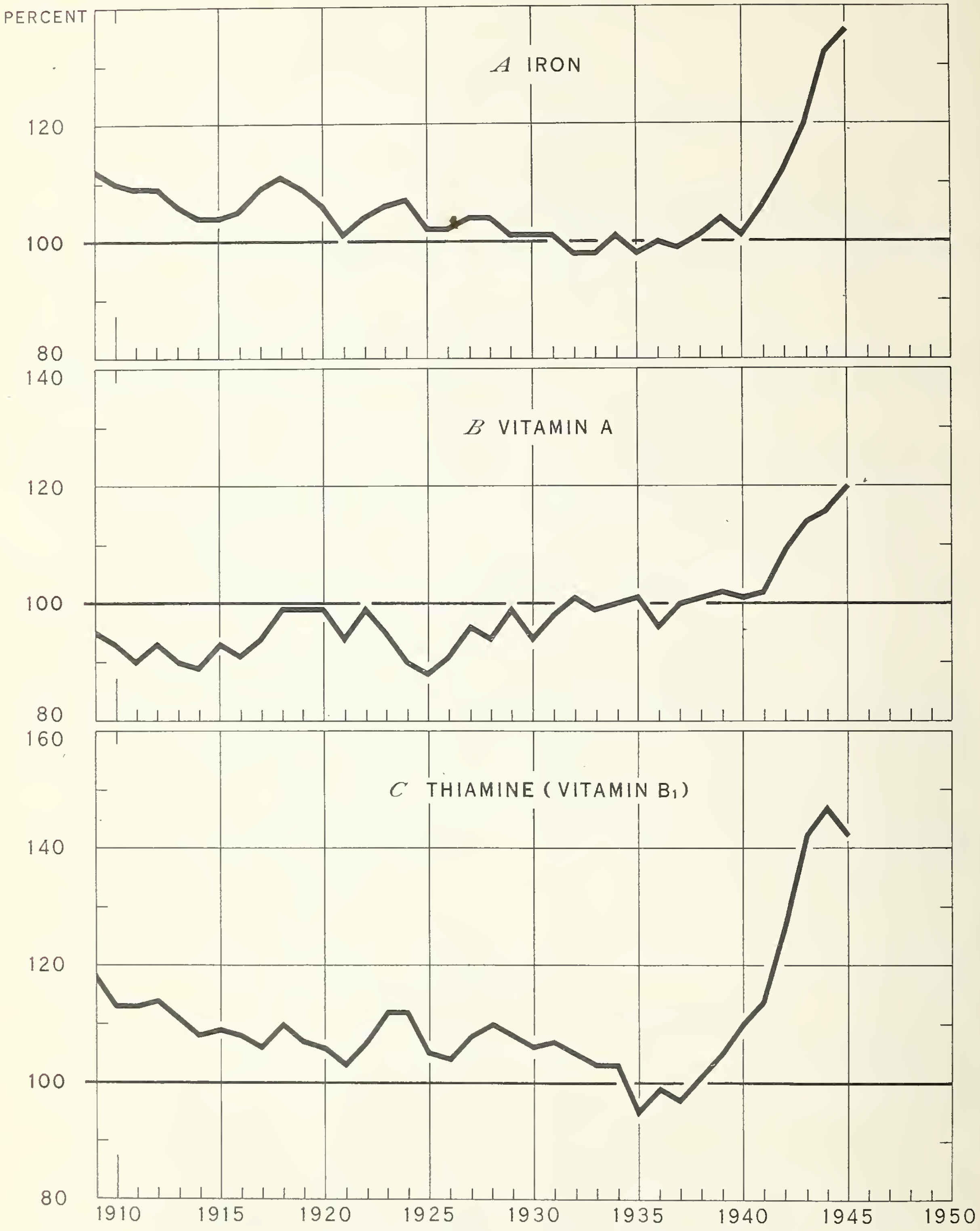


CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 11

IRON, VITAMIN A, AND THIAMINE IN THE PER CAPITA FOOD SUPPLY, 1909-45

INDEX NUMBERS (1935-39=100)

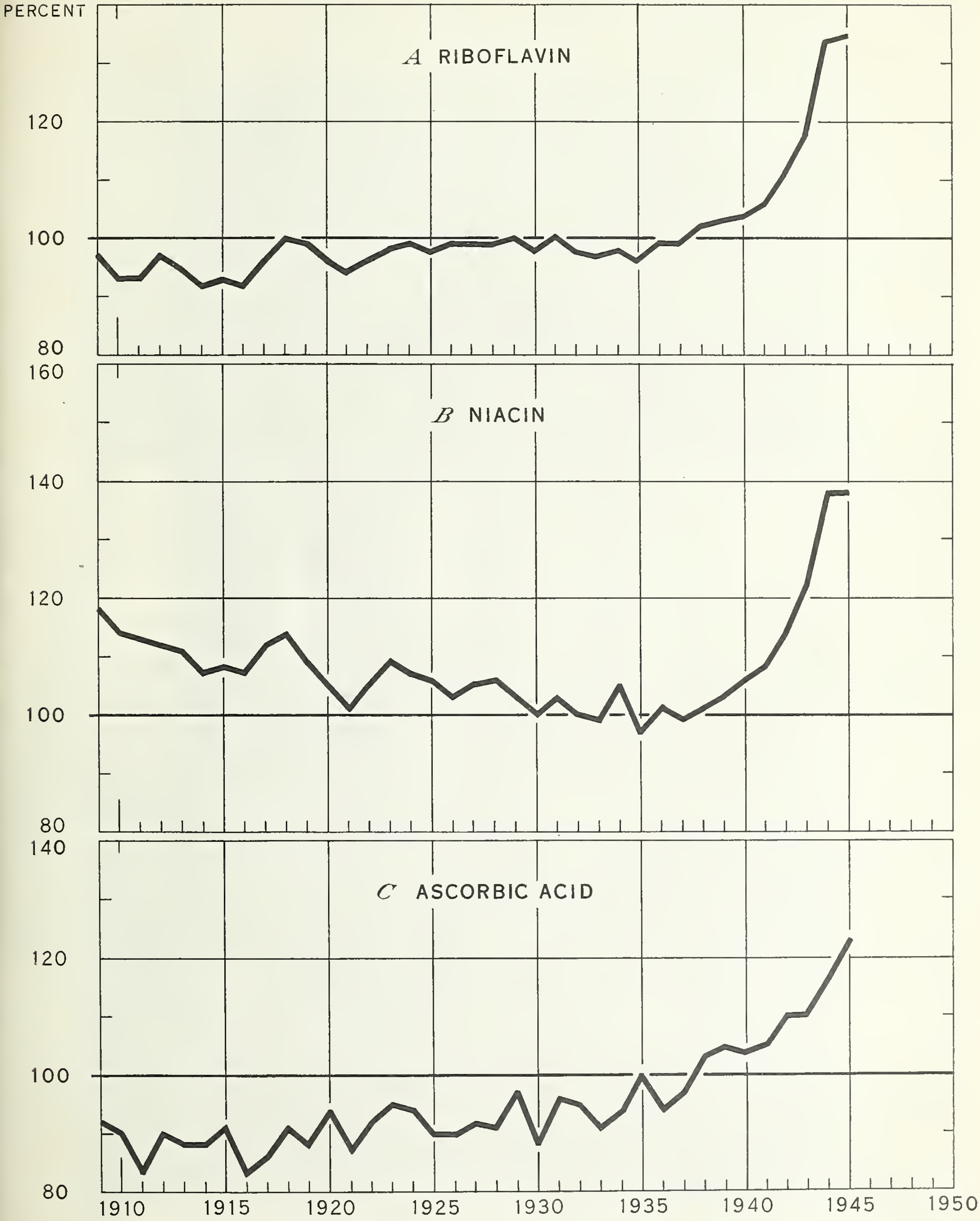


CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 12

RIBOFLAVIN, NIACIN, AND ASCORBIC ACID IN THE PER CAPITA FOOD SUPPLY, 1909-45

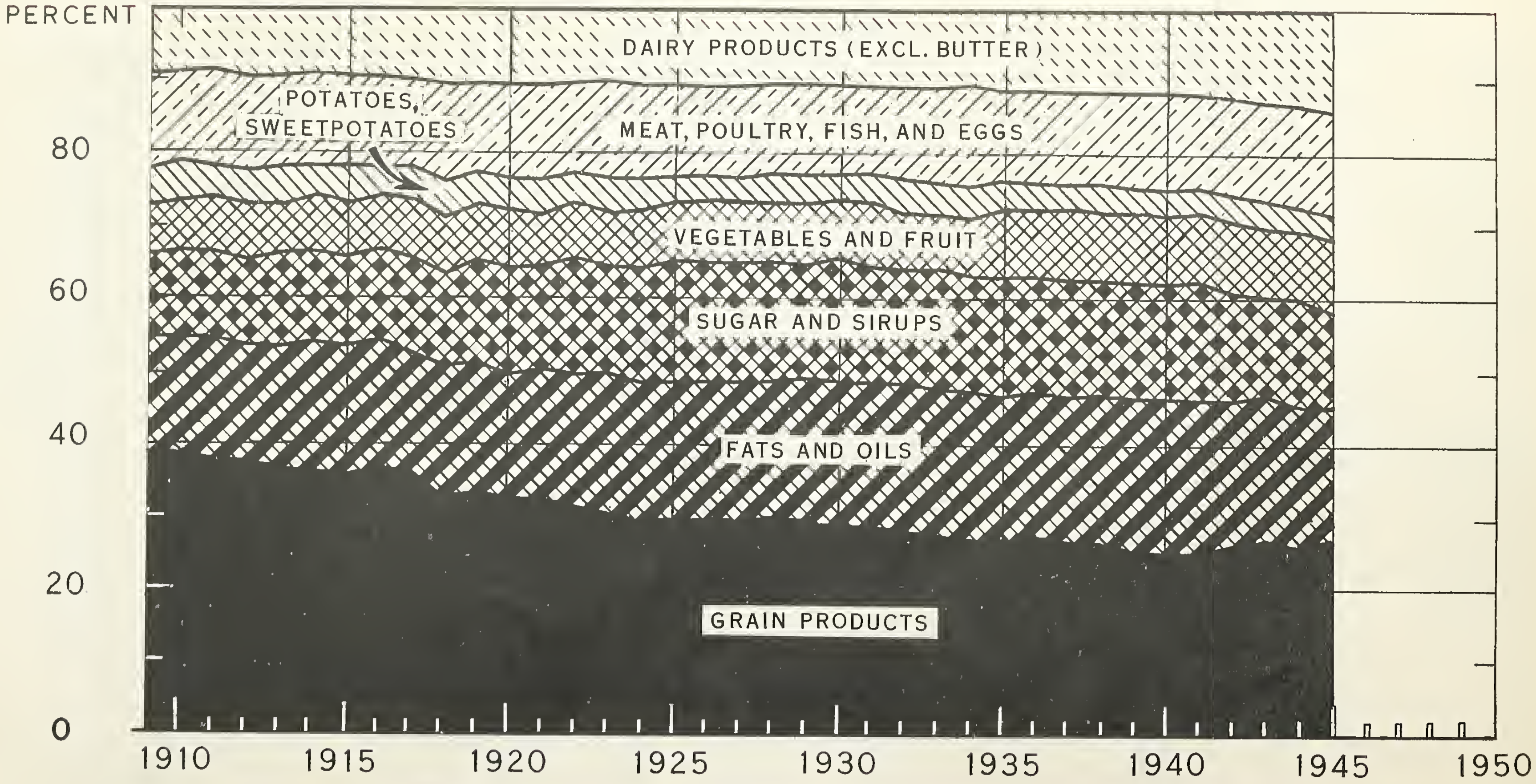
INDEX NUMBERS (1935-39=100)



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 13

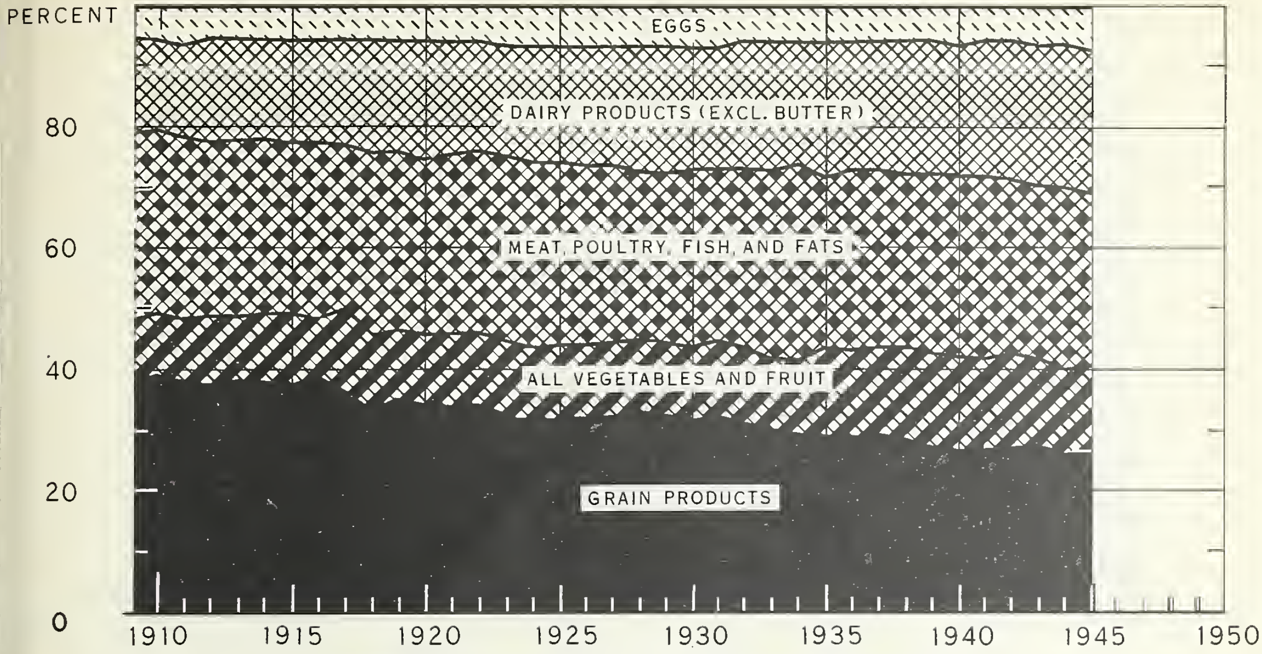
FOOD ENERGY: PERCENTAGE CONTRIBUTION OF MAJOR FOOD GROUPS TO TOTAL FOOD ENERGY IN PER CAPITA FOOD SUPPLY, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 14

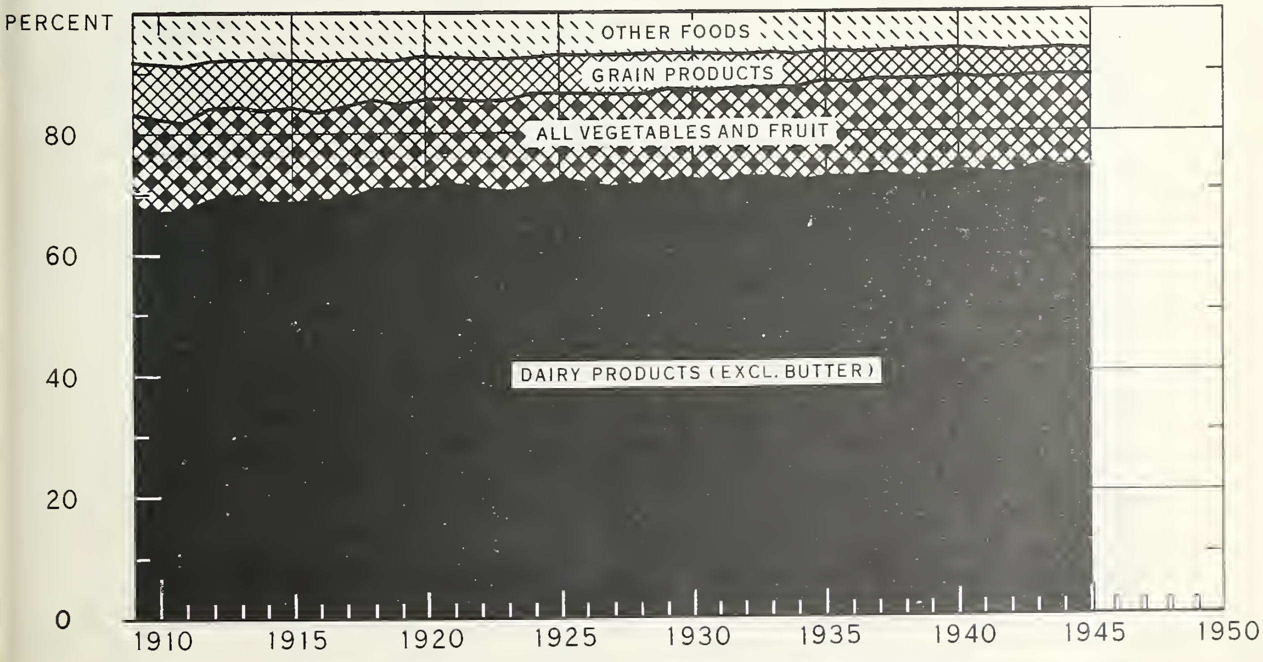
PROTEIN: PERCENTAGE CONTRIBUTION OF MAJOR FOOD GROUPS TO TOTAL PROTEIN IN PER CAPITA FOOD SUPPLY, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 15

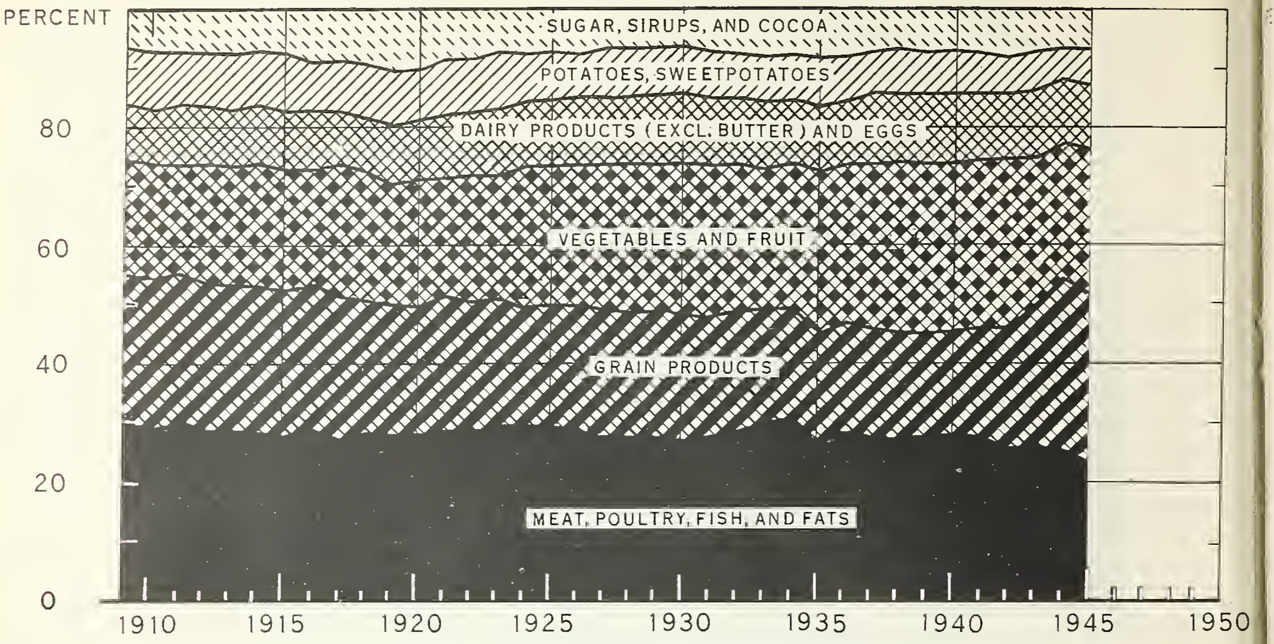
CALCIUM: PERCENTAGE CONTRIBUTION OF MAJOR FOOD GROUPS TO TOTAL CALCIUM IN PER CAPITA FOOD SUPPLY, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 16

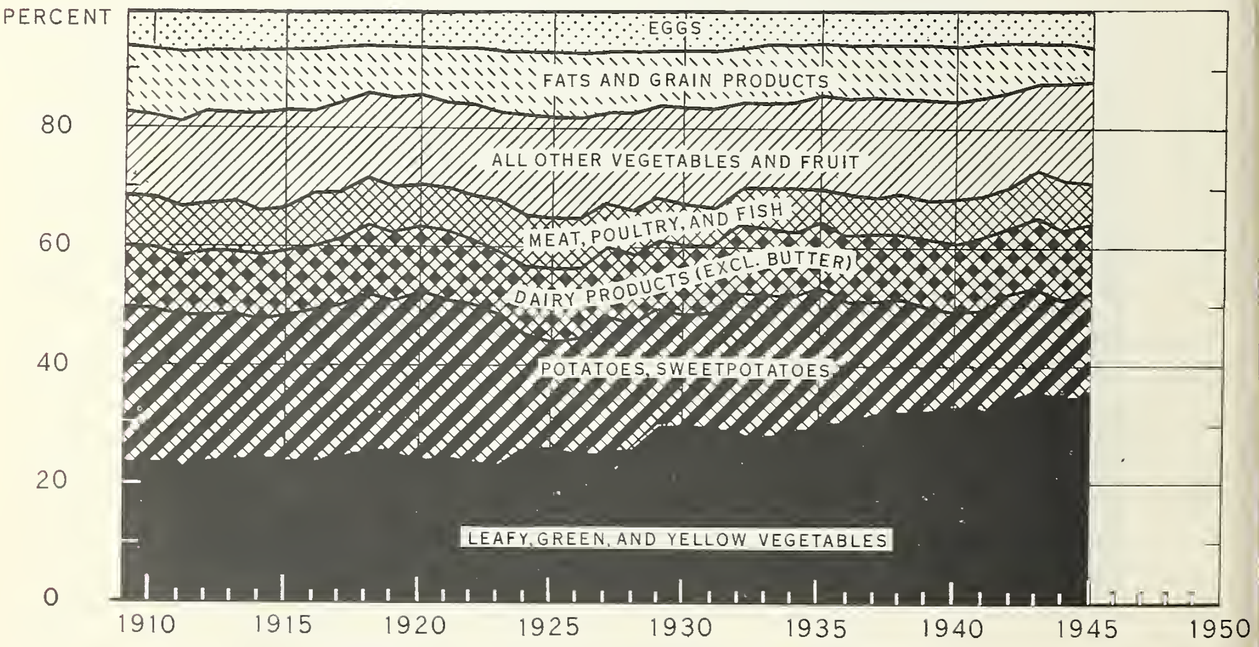
IRON: PERCENTAGE CONTRIBUTION OF MAJOR FOOD GROUPS TO TOTAL IRON IN PER CAPITA FOOD SUPPLY, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 17

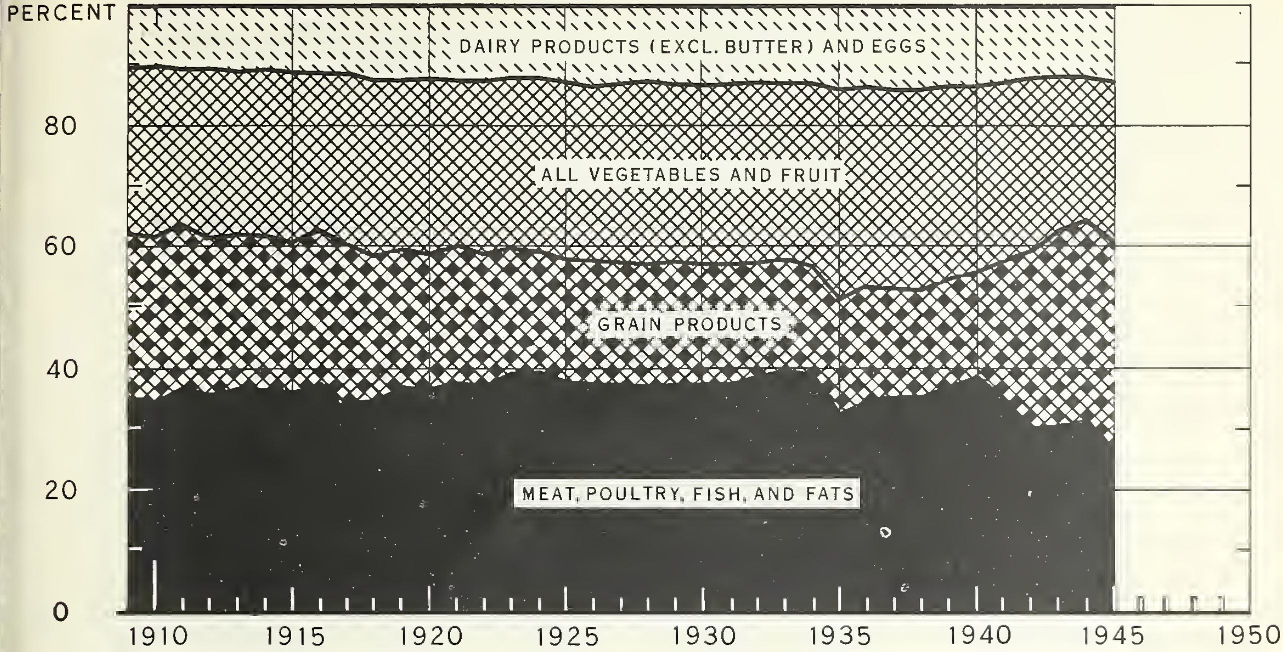
VITAMIN A: PERCENTAGE CONTRIBUTION OF MAJOR FOOD GROUPS TO TOTAL VITAMIN A IN PER CAPITA FOOD SUPPLY, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 18

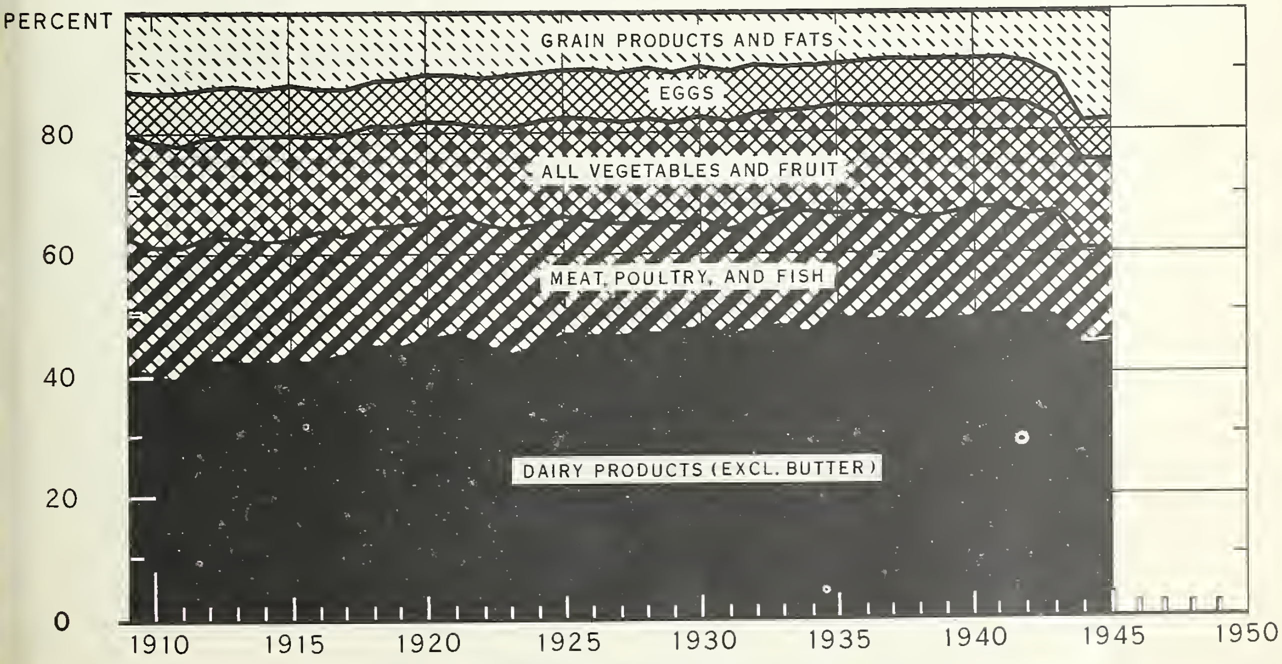
THIAMINE: PERCENTAGE CONTRIBUTION OF MAJOR FOOD GROUPS TO TOTAL THIAMINE IN PER CAPITA FOOD SUPPLY, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 19

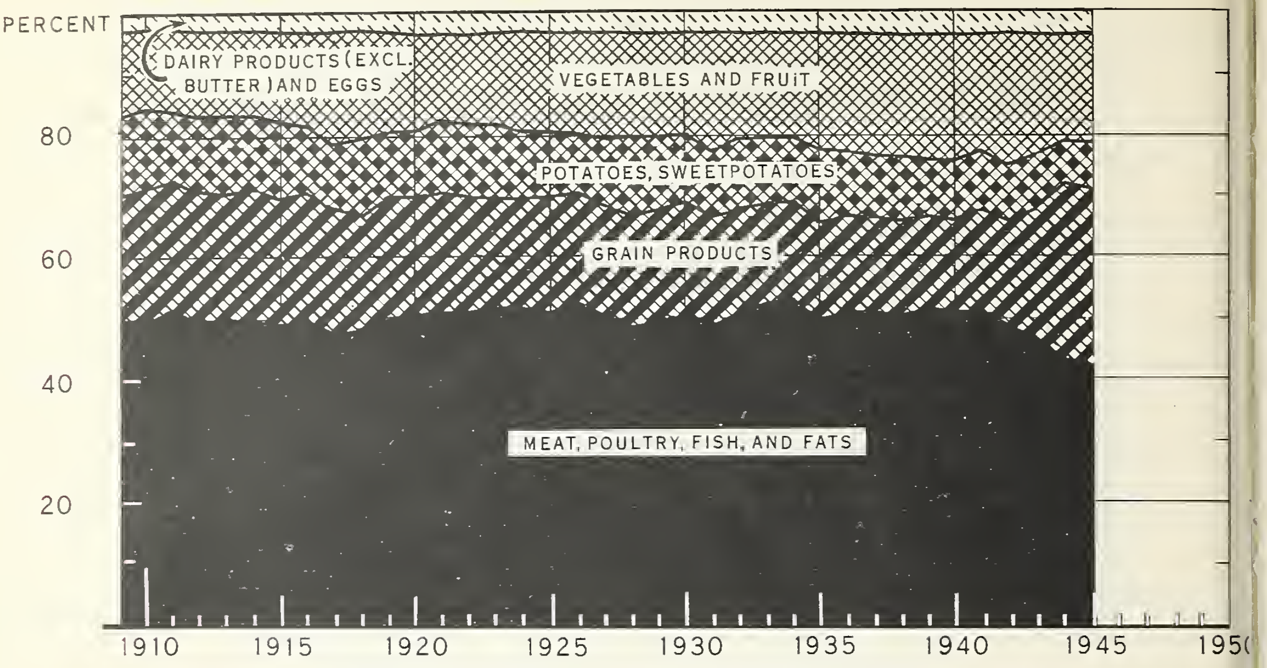
RIBOFLAVIN: PERCENTAGE CONTRIBUTION OF MAJOR FOOD GROUPS TO TOTAL RIBOFLAVIN IN PER CAPITA FOOD SUPPLY, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 20

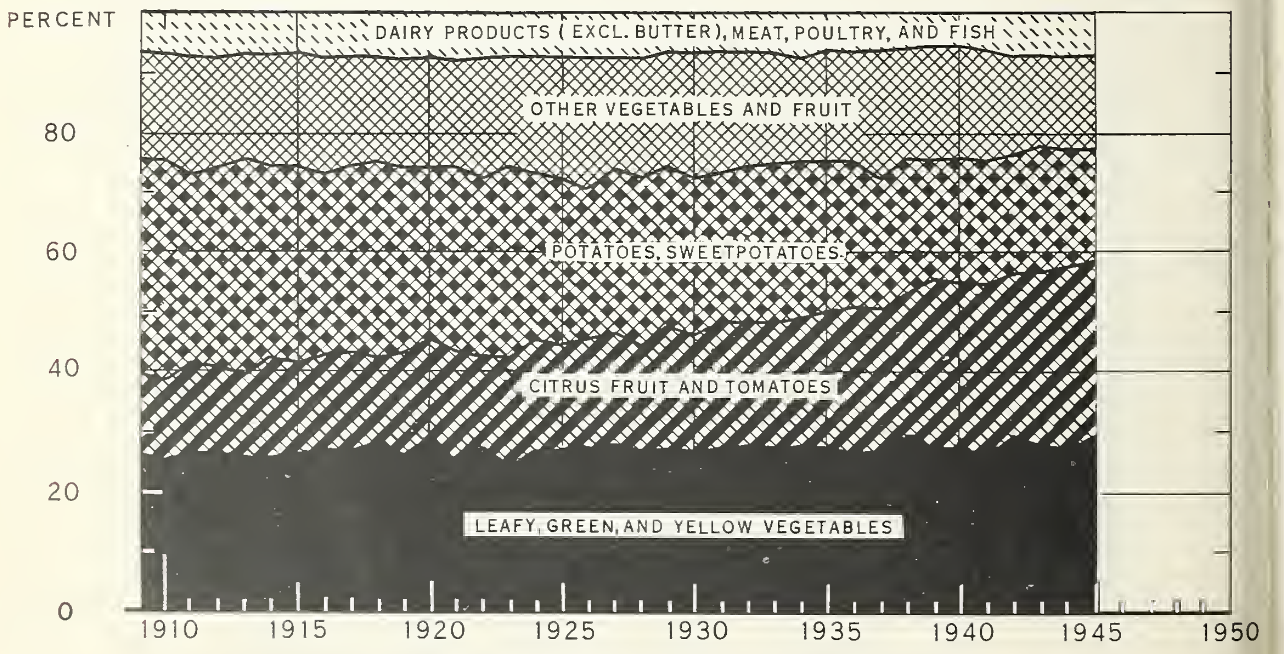
NIACIN: PERCENTAGE CONTRIBUTION OF MAJOR FOOD GROUPS TO TOTAL NIACIN IN PER CAPITA FOOD SUPPLY, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 21

ASCORBIC ACID: PERCENTAGE CONTRIBUTION OF MAJOR FOOD GROUPS TO TOTAL ASCORBIC ACID IN PER CAPITA FOOD SUPPLY, 1909-45



CIVILIAN ONLY FOR 1941-45. DATA FOR 1945 ARE PRELIMINARY.

Figure 22

U. S. GOVERNMENT PRINTING OFFICE O—1947